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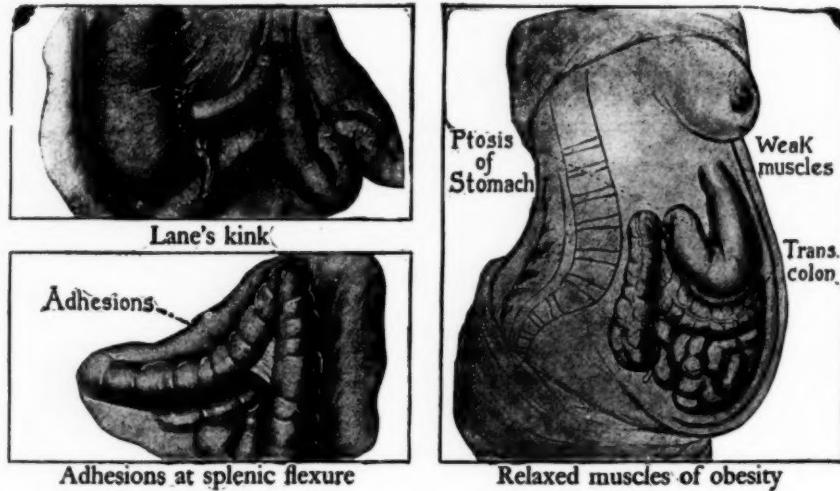
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## Massage in Sprains, Bruises and Dislocations

DOUGLAS GRAHAM, M.D.,

PRESIDENT OF THE MASSACHUSETTS THERAPEUTIC MASSAGE ASSOCIATION  
CONSULTANT AND INSTRUCTOR IN MASSAGE

Boston, Mass.

In the "Life and letters of Mr. George P. Marsh," volume I, page 219, is the following account of the brilliant success of the treatment of two sprains by a wild Arab:

"There seemed, however, small chance that the proposed journey to Sinai, Petra, Jerusalem, etc., could be carried out. The season was already far advanced for desert travel; Mr. Marsh had seriously sprained his ankle at Karnac while carrying his wife through the great temple, and could not walk without assistance of two persons; and Miss Paine had been suffering from a somewhat similar sprain even before leaving Constantinople, and had profited little by the surgical skill of the Franks at that place or in Egypt.

The dragoman, though it was clearly for his interest that the journey should be made, admitted the impossibility of it under these circumstances, and gravely proposed that the two sprains should be cured at once by an Arab doctor of his own acquaintance. He entreated so earnestly and with such apparent confidence in his miracle-worker that a consultation was held with some of the oldest and most intelligent of the Frankish residents at Cairo, and, though no one would exactly take the responsibility of advising it, everyone said that the evidence of these immediate cures was such that he should certainly try the experiment in his own case. Some, indeed, had tried it with entire success, and no one thought any harm could come of it.

"These considerations, added to an intense desire to see more of the mysterious East, decided the lame patients to call in the 'radoubour.' So, the second morning after their instalment in their hotel, Achmet presented himself, bringing with him the most extraordinary creature that can well be imagined. He was scarce five feet in height, and was clad in a single garment of blue cotton fastened about the waist with a leather belt. His old, withered face was lighted up by one eye only, and that seemed but half open, while nothing about his person would have led one to believe that the waters of the broad Nile were within reach.

"There was an unmistakable look of mortification on the part of those who had consented to summon this Aesculapius, but there was no help for it now. At this moment there was a visitor announced to Mr. Marsh, and the lady therefore was the first to prove the wild man's skill. He examined the injured foot, placed it in warm water, dipped his own fingers in olive oil, and rubbed and pressed the foot very gently for about twenty minutes. He then carefully dried it and bade his patient walk. She hesitated having suffered so much and so long from every effort of that kind; but an imperative *Insheh!* decided her. She placed her foot firmly on the floor and took

a step, another and another, and still no pain. In a few minutes she was in the street, and after strolling some hours among the bazaars of the city, returned without the least feeling of discomfort. The cure was perfect and permanent.

"In the meantime Mr. Marsh had passed through a more severe ordeal at the hands of the magician. His foot and ankle, which were both badly swollen and discolored, were very sensitive to the manipulation, and especially to the energetic pulling which, in this case, was a part of the treatment, and at the end of three-quarters of an hour he was well-nigh exhausted by the pain. But then, on looking at his foot, he was surprised to find that the swelling had disappeared, the color was almost entirely natural, and the shoe and stocking, which had been laid aside for almost two weeks, were put on with perfect ease. He was then directed to walk, which, to his amazement, he found he could do without the least pain; and the only unpleasant sensation he experienced afterwards was a slight stiffness for the first day or two, which, however, did not in the least interfere with walking. After this, preparations for forty days' wandering in the desert were made as rapidly as possible."

A highly intelligent gentleman who had recently been treated for a chronic synovitis of the knee by this old Arab, came to me for massage. He had small respect for this dirty old chap or his methods. He never even put his knee into a semi-flexed position so he could work between the articular surfaces.\*

Making allowance for the enchantment that distance always lends, there is little doubt that these two injuries were much benefited by the manipulations of the wild Arab. But it is very evident that he hurt his second patient much more than there was need. It would, indeed, be strange if the teachings of science did not enable us to improve on the methods of blind instinct. And though science often follows art with limping strides, here we can say that science has caught up with art and together they work for the rapid amelioration of disabled joints.

No sane person would think of having massage applied immediately to the seat of a sprain, but many imagine that this is what the masseur will do, and hence deprive them-

\* Many years ago, when I was a medical student in Philadelphia, Dr. Weir Mitchell asked me to call on one of his distinguished conferees, who said to me: "Young man, I will be glad to send you some patients for massage provided you never use it on joints, for if you do it will bring the physician to disgrace every time."

selves of the early benefit that might be obtained from this method of treatment, which quickly relieves the pain, the heat, and the swelling, removes pressure from terminal nerve-filaments, and prevents the parts from sticking together. No two masseurs are alike by nature nor in skill, tact, and education, and the one who knows his anatomy and physiology well, when called to a recent acute sprain, will not begin at once to *masser* the injured joint, but at a distance above it on the healthy tissues by gently stroking or *effleurage* towards the heart, gradually proceeding nearer and nearer to the painful place. This has a soothing effect and pushes the flow along in the veins and lymphatics, making more space in them for the returning currents coming from beyond and carrying away fluids that have leaked out of the vessels. The same should be done on the part of the limb beyond the joint, for the circulation is hindered both in going out and coming in by reason of the swelling.

Next, the masseur who knows his business will begin again at a safe distance above the injured joint, and use deep rubbing, kneading, or massage properly so called, one hand contracting as the other relaxes, alternately making circular grasps, with the greatest pressure upward, and this should be done on the parts above and below the seat of sprain. By this procedure the effects of the previous stroking or *effleurage* are much enhanced, an analgesic or agreeably numbing effect is produced upon the nerves which extend to the painful place and the retarded circulation is pushed along more vigorously, making more room in the blood and lymph vessels for the swelling, the effusion, the dammed embargo caused by the landslide of blood and lymph that is inundating the surrounding territory with exudates farther up the stream to float off, and preparing the way for the next step in treatment.

At the end of fifteen or twenty minutes of this manner of working, gentle, firm pressure can be made immediately over the swollen and but recently very tender parts, which in a few seconds can have circular motion, with the greatest push upward added to it; and this, if sufficient tact be used, will in all probability not hurt, but be positively agreeable. By this the swelling is spread over greater space, pressed out of the tissues as water out of a sponge, and brought into more points of contact with the veins and lymphatics, by which it is absorbed and carried off; the same pressure that causes the dislodgement of stagnating fluids also aids absorption by pressing them into the small vessels. Then a snug, well-fitting bandage should be applied, which may exhibit the bungling of a tyro or the skill acquired by twenty years' practice.

Under this plan of treatment, used twice a day, the comfort produced and the speed of recovery, would scarcely be believed unless experienced by one who had had a similar injury treated in the regular orthodox way, with absolute rest and immobility, by means of fized dressings.

Some years ago I published the results of massage in more than seven hundred cases of sprains, joint-contusions, and distortions of all degrees of severity, treated by many different observers, most of whom were French, German, and Scandinavian army surgeons, in order to confirm the experience obtained in some of my own cases. The invariable result of each and all was that such injuries thus treated got well in one-third of the time that similar cases did under the usual method of absolute rest and fixation and with less tendency to subsequent weakness, pain and stiffness.

Experience teaches that the sooner after a sprain massage is begun, the quicker is recovery. In Germany the military authorities used to require a semi-annual report from their surgeons upon the results of massage in in-

juries of joints; and the statistics of Gassner, Starke, Korner, and others clearly show the rapid results of this method and the economy of time to the soldier. I fear it will be a long time before many of the physicians and surgeons in the United States will condescend to try their hands at massage; indeed, most physicians adopt, prescribe, or tolerate massage for the same reason that Constantine the Great embraced Christianity—more from policy than conviction.

The orthodox treatment of absolute immobility alone in these cases has little else to support it than the dogmatism of centuries, from which it is almost impossible for a surgeon to free himself unless he has been the unfortunate victim of a sprain and had it treated with massage. Supposing a prize of ten thousand dollars were offered for the quickest way to make a well joint stiff, what more effectual means could be resorted to than first to give it a wrench or sprain, and then do it up in a fixed dressing, so that the resulting inflammation would have an opportunity of producing adhesion of the parts? And this is the prevailing treatment of sprains. The same plan of treatment is employed for the purpose of closing up holes in other parts of the body—namely, that of exciting adhesive inflammation; and, unfortunately, it sometimes closes the cavity of a joint also.

It would seem as if we had sufficient proof of the beneficial effects of massage in injuries and affections of joints in human beings without intentionally inflicting similar injuries on animals in order to treat them by massage and study the effects upon them. However, much interesting and confirmatory evidence has resulted from such experiments, and the effects produced are no longer left in the realm of theory, but brought into the sunny light of science and ocular demonstration. The mind of man may be prepossessed in favor of massage, and this would help recovery; of animals it cannot be, unless they had massage before for a similar injury.

Animals that have been treated by massage can be killed and the effects studied and compared with similar injuries in other joints of the same animal that have not had massage. Von Mosengeil, professor of surgery at Bonn, injected corresponding joints of rabbits with India ink. With each rabbit he massaged one of the joints at regular intervals and left the same joint in the other limb untouched. The swelling and stiffness caused by the injection rapidly disappeared under massage, and on examination of the massaged joint after the animal was killed it was found empty of its colored contents. Even when the examination was made shortly after the injection and the use of massage there was scarcely any ink found in the joint; part of it was found upon the synovial membrane, and upon microscopical examination it was seen that the greatest part of it had been forced into and penetrated through the synovial membrane. The darkened lymphatics could even be seen with the unaided eye extending from the injected joint to the lymphatic glands in the groin or axilla, and these latter were also black from the absorption of the ink. Upon the examination of the joint-cavities that had not been massaged, the ink was found in the joint mixed with the synovia, forming a smearable mass, and it had not even penetrated the tissue of synovial membrane. The same results were uniformly obtained in all the experiments, showing that absorption takes place from joint-cavities by means of lymph-spaces and small openings communicating with lymphatic vessels, and through these with lymphatic glands. This evidence was highly confirmatory that the structure and functions of the synovial membrane are similar to those of pleura and peritoneum, where the pump-like action of respiration causes the lymphatics to suck up and propel onward both natural and morbid products. The sheaths of the tendons having a similar structure would be in-

fluenced in like manner by massage, passive and active motion.

But by far the most interesting experiments yet per-

marked relief to the pain, swelling, and stiffness—so much so indeed, that after a few massages of five or ten minutes each of frictions and petrissage once a day the

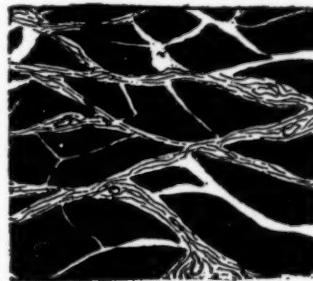


FIG. 1.—**BRUISED MUSCLE WITHOUT MASSAGE.** *f*, muscular fasciculus; *c*, intermuscular connective tissue.



FIG. 2.—**BRUISED MUSCLE WITH MASSAGE.** *f*, muscular fasciculus; *c'*, intermuscular connective tissue.

Fig. 2 shows that the natural size of the intermuscular connective tissue has been preserved, while Fig. 1 shows the intermuscular tissue thickened, and the muscular bundles thinner and compressed. (From the *Archives générales de Médecine*, Février, 1892, p. 197.)

formed to elucidate the effects of massage on joints, muscles, and nerves are those described at length in the *Archives générales de Médecine* for 1891 and 1892. Having obtained excellent results from massage in bruises of joints and muscles, in sprains and dislocations, and also in fractures, some of which were massaged from the commencement of the injury when there was no displacement, after a fixed dressing had been applied as short a time as possible to keep the parts in place. M. Castex sought further opportunities to study more exactly the results of these injuries by intentionally producing them in corresponding places in two limbs of dogs, massaging the seat of one of these injuries and letting the other alone, and after five or six months killing the animals and examining the tissues that had been hurt, under the microscope. He always chose the more injured limb for treatment and the other had no massage, but was left to the natural evolutions of the injuries. The effects, immediate, consecutive, and remote, were carefully noted by experts in laboratory work, who were not told which leg had been massaged.

dog had full use of the leg that had been massaged, whereas the leg that had not been massaged remained swollen, stiff, and painful for a long time, and in some did not recover at all. It is but fair to state that, no matter how severely some of the dogs were injured, especially the shepherd dogs, they did not seem to mind it at all after it was over, running about as if nothing had happened as soon as they were set at liberty. These were not chosen for massage. The details are amazingly interesting, but space forbids mention of more than one of the experiments, which may be taken as a fair sample.

The two shoulder joints of a large watchdog were dislocated by inward flexion. The head of the humerus of each was plainly visible under the skin, showing a luxation forward and inward—intracoracoid. It was easily reduced—put back in place—by traction. Five minutes of massage was at once given to the right shoulder, which seemed to afford relief, judging from the grateful way in which the animal submitted, and after this a figure-of-eight bandage was applied around both shoulders. He

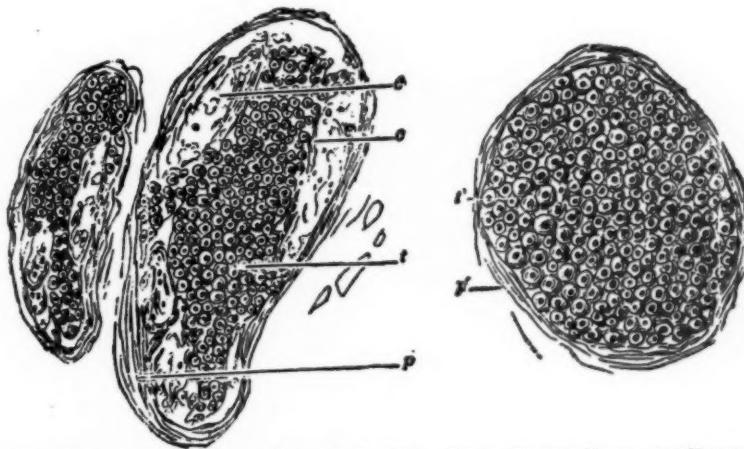


FIG. 3.—**INJURED NERVE WITHOUT MASSAGE.** *p*, perineurium; *t*, nerve tubes or fibers; *c*, new formed connective tissue.

FIG. 4.—**INJURED NERVE WITH MASSAGE.** *p'*, perineurium; *t'*, nerve tubes or fibers.

In Fig. 4 all the nerve elements are of normal appearance, while the nerve elements from the non-massaged side—Fig. 3—shows that the perineurium is thickened, and underneath this there are deposits of new-formed connective tissue which crowd and compress the nerve fibers. (From the *Archives générales de Médecine*, Février, 1892, p. 200.)

The experiments were done in the laboratory of Professor Riche. The massage was done either immediately or very soon after the injuries—even, in the case of the dislocations, as soon as they were set—and always with

had massage five minutes daily to the right shoulder alone, and for the first three days he walked with difficulty. The right shoulder gradually became less painful to touch and he stood firmer on this side. On the fourth and

subsequent days all sorts of pressure upon the masséed shoulder were borne without discomfort, but when the other shoulder was pressed the dog growled and attempted to bite. Six days after the dislocations he supported himself well on the masséed limb, but held the other up, as the non-masséed shoulder was still swollen and painful. Both shoulders then stayed in place in spite of passive movements that might have dislocated them. On the eighth day the dog walked well with the masséed limb, but held the other up, as the latter was still swollen and painful and there was crepitation in the joint. Thirteen days after the injury the dog took an occasional step with the limb that had not been masséed, and two months later it was in the same condition, while he made free use of the limb that had been masséed in walking and running. There was then atrophy of the muscles of the left shoulder, evident by the prominence of the bones, but none of the muscles of the right.

Testimony in favor of the early use of massage in dislocations in human beings, being careful not to move nor disturb the joint, is gradually accumulating. Not only M. Castex, but also M. M. Fége, Archambaud, and others have reported more favorable results from its application from the very first day of the injury than when it had not been used. Passive motions, I think, should not be begun until the patients find that they can make a little voluntary motion. Fifteen or twenty days of this treatment seems to be all that is necessary in mankind, and this is just about the length of time required for the repair of the rent in the capsule. In the meantime the surrounding tissues are preserved in health and activity by means of the massage.

Soon after the swelling from the injuries to the dogs had subsided, the muscles became more or less atrophied in the limb that had not been masséed, but not at all in the limb that had been masséed. At the end of five or six months the dogs were killed and the tissues examined with the microscope. The muscular tissue of the side that had not been masséed presented a diffuse sclerosis or hardening; the connective tissue intervening between the fibres and bundles of fibres was thickened; there were interstitial hemorrhages, especially in the cellular tissue around the muscles; the internal and external coverings of the bundles of muscular fibres (*perimysia*) were infiltrated with blood, and also the fascia or covering outside of this. The transverse markings of the muscular fibres (*striae*) were effaced in many places, while the longitudinal striation or marking, which is not seen normally, was very distinct. M. Castex has left us to surmise the appearance of the sarcolemma or covering of the individual fibres (of the nonmasséed side). In all probability this was also hardened, thickened, and infiltrated with blood, as were the outer and larger coverings. The muscular tissue from the corresponding region that had been masséed was found to be normal in every particular.

The blood-vessels appeared perfectly natural from the masséed side, but from the side that had not been masséed they presented a hyperplasia, or thickening, of their external coat.

The nerve-filaments were found to be natural in the masséed side, while in the side that had not been masséed there were abundant evidences of neuritis and perineuritis exerting destructive compression upon the nerve-fibres. The perineurium, or sheath covering the bundles of nerve-fibres, was at least three times as thick in the non-masséed side, and the connective tissue around the perineurium was also thickened with numerous new-formed cells. The small vessel in the perineurium were also the seat of a peripheral hyperplasia, or thickening. The lesion of the nerves was more marked than that of the vessels.

In human beings, M. Castex found that when massage was begun early or from the very first in contusions, sprains, and dislocations not only were the immediate symptoms soon relieved, but also the subsequent serious consequences that are so apt to follow these injuries—wasting, weakness, contraction, and stiffness—were prevented. But when he tried massage in old cases of muscular atrophy or wasting following injuries to joints, he got no increase of muscular tissue. The stiffness was gotten rid of; the muscles became more supple, but they still remained thin and lacking in strength. If he had combined passive and active movements with the massage, he would probably have gained growth of muscle. He found, as others do, that the galvanic and faradic currents were of benefit in promoting increase of muscular tissue. Muscular contraction produced by electricity is but another form of motion.

Numerous theories as to the cause of muscular atrophy from injuries to joints have also been considered and abandoned. The most probable and most generally accepted is that of reflex action. The injury to the joint starts up more or less inflammation (arthritis); the articular nerves are irritated; this irritation is transferred to the spinal cord; the nerve centres affected act in turn upon the centrifugal nerves going to the muscles, and these determine at their peripheral ends the muscular atrophy. With a view to the elucidation of this, M. Deroche has repeated seven times, and always with the same results, experiments which were done for the first time at the College of France by M. M. Raymond and Oranoff. He divided the posterior roots of the last three lumbar nerves on the left side in dogs and rabbits. After cicatrization had taken place, he assured himself that the numbness was complete from the thigh to the knee of the left lower limb, so that irritation of this region was not felt. The corresponding limb was left intact. An arthritis was then excited on both knees by introducing a thermocautery into them. No pain was felt in the left knee, but much in the right. Three months afterwards the animals were killed, and in both knees the lesions of arthritis were found; but the muscles of the thigh of the left leg were of natural size; of the right, atrophied.

Professor Simon Duplay and M. Cazin have also made a careful study of this subject in much the same way. Under the microscope they found that the articular filaments always presented signs of inflammation, but the large nerve-trunks and spinal cord showed no appreciable change, and the results of the examination of the muscles were negative except as to diminution in size. They therefore concluded that the muscular atrophies consecutive to joint injuries consist of a simple atrophy, and that this can only be explained by a dynamic action, a simple reflex due to the terminal nerve-filaments of the articular nerves.

M. Deroche thought he had found that the muscular atrophy was due to diminution of interfibrillary substance, and that there was an ascending degeneration of the posterior columns on the same side. However that may be, the inference is certainly justifiable that massage acts to prevent muscular atrophy by maintaining an influence, a movement, or something in the muscles which the spinal cord is for a time unable to impart to them; and in order to do this it should be applied immediately or soon after the injury, for then the muscles are more quickly aroused from the lethargy and stupor into which they have been plunged by the shock of the accident.

It is a wonder how the shoulder-joint ever stays in place with little else than muscular action and atmospheric pressure to hold it. On account of the length and laxity of its ligaments one would think that the large head of the humerus would be continually slipping out of the

(Concluded on page 190)

## Clinical Aspects of Arterial Hypertension\*

EDWARD E. CORNWALL, M.D., F.A.C.P.,

Brooklyn, New York,

There is a fairly well defined range within which the blood pressure in its various phases is regularly found in health; and pressure persistently above or below this range suggests disease or dysfunction. The present discussion has to do with abnormally high pressure.

The subject of arterial hypertension can be approached from the pathological and from the physiological side. Pathologically it appears as a result, cause or accompaniment of certain disease conditions. Physiologically it appears as a manifestation of reserve functional power of the circulatory apparatus exercised in the interests of an adequate circulation, and as a symptom of nervous or endocrine derangement and functional overactivity.

As a compensatory adjustment it appears in response to lessened elasticity of arterial walls and diminished lumen of arteries and capillaries and consequent interference with the blood supply of vital regions of the body; to organic damage of the kidneys, and to toxemias and the presence in the blood of excessive amounts of waste products which require in their elimination the help of the circulation. As a manifestation of functional circulatory overactivity not obviously compensatory, it appears as a result of hyperthyroidism, of overwork, and of anxiety and fear which may create a quasi prophylactic demand for increased circulation. Hypertension is so often associated with arterial sclerosis and spasm, chronic nephritis, overeating, overworking and worry, that we are justified in suspecting the presence of some of those conditions in cases in which it persistently appears.

With these general remarks I will pass on to more particular discussion, and will let that discussion take the form of a few thumb nail sketch reports of cases which showed high blood pressure; which, indeed, can serve only to suggest the extensive clinical aspects of arterial hypertension.

**Case I.** Man of 60. First seen in 1920. Had diphtheria twelve years and influenza one and a half years before. Principal symptom, gets tired in his legs after walking a short distance. Blood pressure, 170 S., 90 D. Alteration to the extent of between five and ten millimeters of mercury observed in the systolic pressure. Two weeks later, after treatment, blood pressure was 138 S., 70 D. Patient died about three years after the observations above noted were made.

This case is particularly interesting as it shows the value of blood pressure observation in the diagnosis of alteration of the heart.

**Case II.** Man of 65. First seen in 1921. Had chronic cholecystitis for many years; was not operated on. Was a hearty eater. Principal symptoms, moderate shortness of breath on exertion and "nervousness." Blood pressure, 170 S., 90 D. One month later, after treatment, blood pressure, 160 S., 80 D. About two years after the observations above noted, patient died with characteristic symptoms of coronary thrombosis.

**Case III.** Man of 53. First seen in 1913. Had his gall bladder removed ten years before. Gave a history of constipation and indigestion for many years, and for the past four or five years of a frequently experienced sensation of burning at the right edge of the sternum in the second interspace, which was brought on by exertion. Said that he often waked up at about 3 a. m. with palpitation, and had palpitation on going to bed, and was very despondent. Blood pressure, 155 S., 95 D. One year later, after treatment, he reported improvement in his symptoms; blood pressure, 155 S., 85 D. He died suddenly, apparently of heart disease, in 1920.

In the above cases of myocardial disease the blood pressure showed a moderate elevation with a relatively large pulse pressure, and was not much influenced by treatment.

**Case IV.** Man of 55. First seen in 1912. Principal symptom, vertigo experienced first two months before on rising, which had lately become more or less constant: if he lay on his left side or leaned toward that side the vertigo was aggravated. Systolic blood pressure, 200. After treatment, the vertigo lessened and was evident only when he tipped his head directly backward, and the blood pressure lowered considerably, being observed, about 150 S., 80 D.

This case, apparently of cerebral arteriosclerosis, suggests in its response to treatment, which consisted of regulation of diet, the coexistence of toxemia or of the presence of an excessive demand for elimination of nitrogenous waste.

**Case V.** Man of 41. First seen in 1913. Was obese. Had been a hearty eater. Recently had had a retinal hemorrhage. Blood pressure, 220 S., 115 D. About one year later, after treatment, blood pressure was 175 S., 110 D. and patient complained of having pains in the precordium and down the right arm, which had recently developed as an occasional occurrence. In response to the nitroglycerin test the blood pressure fell to 155 S., 80 D., and the pains became worse. One year still later, the blood pressure was 170 S., 90 D. After this the blood pressure showed a tendency to rise, but was not observed higher than at first noted. The patient died in 1919.

Compare with the course of this case of chronic nephritis complicated by myocardial disease, the course of the two following cases of chronic nephritis.

**Case VI.** Man of 45. First seen in 1911, when he complained of gastric and intestinal flatulence and "black mondays," and showed a trace of albumin and a few hyaline casts in the urine, and a systolic blood pressure of 220. One year later, after treatment, his systolic pressure was 155 and his symptoms were practically all gone. Shortly after the last observation he felt so well that he discontinued treatment, and the systolic pressure promptly rose to 200. Since then he has kept under treatment, and the systolic pressure has been found mostly between 160 and 180, and the diastolic between 95 and 105.

**Case VII.** Man of 66. First seen in 1912. Gave a history of headaches and dizziness and some shortness of breath on exertion, and of a systolic pressure five days before of 220, and one five years before of 180. On examination the blood pressure was found to be 180 S., 120 D. and the urine showed a slight trace of albumin and a few hyaline casts, and an excretion of urea in twenty-four hours of 474 grains. The patient has kept fairly well under treatment. His blood pressure in 1917 was 180 S., 100 D. Lately when met casually, he appeared to be in fairly good condition (twelve years after his systolic blood pressure was 220, and seventeen years after it was 180).

The last case illustrates the long course sometimes observed in chronic nephritis; as does the following case. A man died at the age of 84 of urinary septicemia, complicating prostatic disease; who had chronic nephritis when he was 62, and was then told by his family physician that he would probably die inside of two years. In spite of his chronic nephritis and the bad prognosis of his physician, he lived for twenty-two years after.

The following case illustrates the fact that extreme hypertension is of bad omen in chronic nephritis; it also shows that a very high pressure can be endured for a considerable time in some cases:

**Case VIII.** Woman of 39. Gave a history of chronic nephritis following pregnancy. Two years before her death she showed a systolic pressure of 290, which came down for a time under treatment to 220. Two months before her death her

\*Read before the Brooklyn Society of Internal Medicine, Feb. 29, 1924.

blood pressure was 290 S., 170 D., and twice it was observed in this last period to be over 300.

Extreme hypertension indicates a desperate endeavor on the part of the circulatory apparatus to meet the extraordinary demand made on it for compensation, even to the extent of threatening destruction of its own structures. It is found in advanced cases of chronic nephritis, being conditioned by the state of the myocardium; and it may be a sudden development in cerebral apoplexy, in response to an urgent demand from brain tissues whose blood supply is interfered with by the mechanical effects of the apoplexy.

The following case illustrates the prognosis significance of lowered tension after previous hypertension in chronic nephritis:

**Case IX.** Woman of 40. Gave a history of chronic nephritis following pregnancy, with hypertension. The day before I saw her the systolic pressure was found by the attending physician to be 180. I found her complaining chiefly of nausea and gastric irritability; blood pressure was 110 S., 45 D. Largely on account of the greatly lowered blood pressure a very bad prognosis was given. She died that night.

The following case illustrates an important practical point:

**Case X.** Man of 54. Seen first in 1913. Gave a history of malaria three years before, of ulcerative stomatitis four years before, of appendicitis twenty-eight years before (no operation), of constipation, and recently of great anxiety about his health. Blood pressure taken immediately on entering office (after walking, and being in a state of excitement), 180 S., 105 D. After sitting quietly for an hour the blood pressure was 120 S., 80 D. The patient was then subjected to an exercise test, with the result that the blood pressure became 140 S., 70 D. This patient subsequently did well, although he went through a siege of arthritis accompanied by low blood pressure, which was mostly relieved by removal of a septic focus in the ethmoid sinuses. His blood pressure recently was 138 S., 80 D.

The practical point which this case is cited to illustrate is the advisability of making repeated examinations of the blood pressure in order to eliminate as far as possible the neurotic factor in the patient. If the first finding had not been corrected by subsequent examinations, great anxiety if not a mistaken diagnosis, might have resulted in this case. It is also interesting to note that the rise in the blood pressure from the (presumably) neurotic factor was much greater than that from the exercise test.

The following case suggests the possibility of an endocrine imbalance.

**Case XI.** Woman of 55. Gave a history of good health until the menopause, when she developed asthma and some shortness of breath on going up stairs. Blood pressure, 200 S., 120 D. Six months later, after treatment, blood pressure was 150 S., 90 D.

The two following cases illustrate the effect of treatment on hypertension in favorable cases:

**Case XII.** Man of 61. First seen in 1923. Gave a history of feeling dizzy, especially in the morning, for the past year. Urine negative except for pus cells. Blood pressure, 180 S., 100 D. Symptoms rapidly disappeared under treatment, and blood pressure lowered materially, being found recently, 155 S., 85 D.

**Case XIII.** Woman of 61. Trace of albumin and hyaline casts in urine, also diminished urea and 6.5 per cent of sugar. Blood pressure, 220 S., 115 D. One month later, after treatment, blood pressure was 165 S., 70 D., albumin and casts, and urine showed normal urea and a trace of sugar.

It has been stated that the effect of tobacco on the blood pressure is to raise it, but I have found chronic tobacco poisoning associated with hypotension, although I have observed a single smoke to cause temporarily a slight rise of an habitually low pressure.

Aortic incompetence, among valvular defects, regularly raises the systolic pressure, but with a corresponding lowering of the diastolic pressure, producing a characteristic blood pressure picture.

The varying effects of exercise on blood pressure in different pathological conditions has been taken advantage of in devising tests of myocardial efficiency, but these tests lack conclusiveness because it is impossible to prevent other factors which can modify the blood pressure from obscuring the results, which are further obscured by the vagaries of the pulse rate. In experimenting with these tests I used for a standard exercise, running back and forth briskly for thirty seconds. The following reports illustrate the working of this test:

**Case XIV.** Man of 25. Apparently healthy. Blood pressure, 135 S., 85 D., pulse rate 72. After exercise test, blood pressure, 175 S., 65 D., pulse rate, 136. Three minutes later blood pressure, 135 S., 85 D., pulse rate, 85.

**Case XV.** Man of 50. Albumin and hyaline and granular casts in urine. Blood pressure, 210 S., 120 D., pulse rate, 120. After exercise test, blood pressure, 220 S., 120 D., Pulse rate, 160. Three minutes later, blood pressure, 200 S., 120 D., Pulse rate, 120.

**Case XVI.** Man of 50. Suffers from attacks of oppression in the chest with pains in both arms. Blood pressure, 100 S., 75 D. After exercise test, blood pressure, 100 S., 65 D., Pulse rate, 100. Three minutes later, blood pressure, 100 S., 75 D., pulse rate, 88.

It is interesting to note in the case of the healthy individual, in response to the exercise rest, that the pulse pressure enlarged at both ends, and twice as much at the systolic as at the diastolic end; in the case of chronic nephritis, that the diastolic pressure remained fixed and the pulse pressure enlarged only at the systolic end, and that not much; and in the case of myocardial disease, that the systolic pressure remained fixed and the pulse pressure enlarged only at the diastolic end.

The treatment of arterial hypertension, looked on as a compensatory and constructive procedure, should be indirect, that is, it should consist of measures to remove or ameliorate the conditions which make necessary or excite the exercise of the circulatory reserve force. Exceptionally, however, direct treatment may be called for, as in cases where the hypertension threatens acute and serious damage to the circulatory apparatus itself or aggravation of pathological conditions. Good judgment is required in using direct treatment; high blood pressure should not be directly lowered unless the indications for doing so are very clear; and it is better to err on the side of conservatism. The indirect treatment, which is always called for, can be summed up in hygiene, rest, diet and removal of infective foci. The good effects of dietetic treatment are often strikingly shown by great lessening of the hypertension.

1218 Pacific Street.

#### Kala-Azar in Children

Giraud and Zuccarelli believe that if chronic hypertrophy of the spleen be diagnosed and malaria and other common disease causing enlargement of the spleen can be excluded, there is little doubt as to the probable presence of leishmaniasis. The Mediterranean form affects mostly children. The main clinical features are progressive anemia, bloated face, irregular fever and enormous enlargement of the spleen. It may reach down into the pelvis. There are no nucleated red blood corpuscles and no eosinophilia, but leukopenia has been observed. Puncture of the spleen is harmless and clears up the doubtful diagnosis. In the five cases reported, three of the children died in spite of injection of tartar emetic intramuscularly or by the vein.—(*Paris Med.*, Mar. 15, 1924.)

#### Nonspecific Influence on Immune Body Formation

Hajos and Sternberg investigated the hemolysis and agglutinin formation in rabbits that had been injected with sheep blood corpuscles, and paratyphoid bacilli B; sodium chlorid and potassium chlorid were also injected. Increase of the immune body formation could not be traced in any case.—(*Zeit. f. Immun. u. exper. Therap.*, 34 : 218.)

## Paul Ehrlich

"A Man of Genius, and an Inspiration to Humanitarians"

HERMAN GOODMAN, B.S., M.D.

New York

Paul Ehrlich was born on March 14, 1854, in the small village of Strehlen near Breslau in Silesia. The home life of young Ehrlich was ideal. His mother had a fund of praise and enthusiasm which carried into Ehrlich's student life the inspiration to continue despite the difficulties which beset his path. Heredity may have played a part in Ehrlich's life, as may be gleamed from the exploits of his family on his father's side. A grandfather meddled in natural and exact science even at the age of 90, and gave popular lectures in his small village. On his mother's side, Ehrlich was a Weigert, and his cousin was Karl Weigert, the famous pathologist. Numerous other members of this family won their spurs in medical and other scientific circles.

Paul graduated from the elementary school at Strehlen, and was sent to the Breslau Gymnasium or high school. Mathematics and Latin were Ehrlich's favorite studies at this institution where sciences played but a small part in the curriculum. Even at high school, Ehrlich transformed assigned tasks into chemical terms, most often to the dissatisfaction of non-understanding teachers.

The first semester of his university term was likewise spent at Breslau, with natural science as the subject of major interest. The second year of the university course was at Strassburg. It was here that Ehrlich met Waldeyer, a pioneer, and teacher of great strength, and Ehrlich decided on the course of medicine. The ordinary studies of his chosen profession interested Ehrlich far less than the problems underlying them. A pamphlet on lead poisoning activated all of Ehrlich's natural acumen, and inborn research instinct. The youthful student found in this labor of love the basis of his future activities. The use of lead entailed too many difficulties, so that a dye stuff, namely fuchsin, was substituted, and the beginning of all his later work had been made.

Ehrlich practically confined himself to experimental work of his own choosing. The orthodox studies of the medical student of the time were given but scant attention, and he approached his final examination for a doctor's degree at Breslau in 1877 with some anxiety. However, his reputation for the original work he had been doing had already spread about the university, and the degree was given him. The next succeeding year, he was appointed "Oberartz" in the First Medical Clinic of Prof. Frederichs at Berlin. Every annoyance of every day medicine that could possibly confront a young chief found its way to Ehrlich, who truth to tell, had other distant thoughts storming through his head. Fortunately, a young assistant, especially proficient in practical medicine, relieved Ehrlich, and left him free for his researches. As long as Frederichs lived, Ehrlich's service at the Clinic interfered in no way with his original work, but under the direction of the new professor, Gerhardt, much routine technical work (which others could have done as well) was saddled on young Ehrlich, so that his own plans were curtailed. He left the service much embittered in 1887.

Along scientific endeavors, Ehrlich had reached the year 1888. He had enriched the field of investigation by methods of drying and fixing blood smears by heat.

He had unfolded the triacid stain. He had discovered the mast cell, and the detection of their granules by basic aniline staining.

He had determined different members of the white



Fig. 1.—Paul Ehrlich at 60 years.

blood series, neutrophiles, basophiles, and acidophiles, by their individual staining reactions. He actually was the founder of the study of hematology in clinical medicine, and this basic pioneer work was so well done, that no new principle has been brought forth by any other investigator, although many fine details have been uncovered. Ehrlich disclosed the acid fast nature of the tubercle bacillus, and initiated the stained microscopic demonstrations of the organism on the day after its discovery by Koch, in such a way as to widen the scope of usefulness of the latter's demonstration of the germ. The diazo reaction was likewise devised by Ehrlich, modified a number of times, and still useful. Vital staining was another of Ehrlich's devices, in which he merged descriptive cellular pathology into experimental intracellular chemistry. Ehrlich named the gonococcus, a fact known to few. In his revolutionary studies on the oxygen requirements of the organism, Ehrlich laid a firm foundation for his future side chain theory.

If Ehrlich at 33 years of age, had contributed no further studies than these, his name would still have earned a high place in the annals of medical history!

On a visit to Silesia, Ehrlich had met and married (1883) Hedwig Pinkus, the daughter of a manufacturer. Honors had come also in appointments as titular professor in 1884; and as Docent at Berlin University in 1887. The career of this most promising of scientists was almost closed at this time. In his experimental investigations of the tubercle bacillus he had become infected, for on examining his expectoration following an attack of coughing, Ehrlich found the organism of the dread disease, tuberculosis.

Cessation of work was imperative. A trip to Egypt and to other countries was made, and by the never ending efforts of his wife, who of course travelled with him, Ehrlich's health was restored sufficiently for him to re-

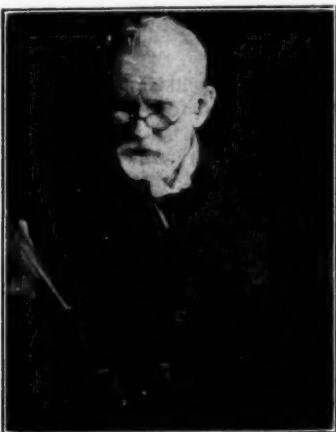


Fig. 2.—Paul Ehrlich in his laboratory.

turn and receive the newly discovered tuberculin. His cure was affected after one and a half years absence from work.

For a while, Ehrlich's efforts were restricted by lack of facilities in the private laboratory he outfitted, but with the completion of the Koch Institute, and his appointment to the University of Berlin, fundamental problems in immunity and antitoxin were taken up. The decade from 1890 to 1899, forms what is generally given as the second period in the development of the work of Ehrlich. Immunization of animals against vegetable poisons, as abrin and ricin, became the basis of weighty studies of clinical import, and the quantitative factors in these immunization studies were to play a large part in the investigations for the production of antitoxin of high concentration. The evaluation and standardization of diphtheria serum studied at this time by Ehrlich made possible the world wide use of diphtheria antitoxin. The possibility of the inheritance of immunity was studied at this period. Tuberculin therapy was under investigation. There was a continuation of the "side chain" theory experiments, the basis of which was laid in the study of the oxygen requirements of the organism.

Further honors had come to Ehrlich. In 1896, he was appointed director of the newly founded Institut für Serumforschung at Steglitz near Berlin. Three years later, larger quarters were made available at the Institut für experimentale Therapie at Frankfurt a. Main of which Ehrlich was director, and the third period of constructive work began.

Studies in hemolysin were undertaken which had important bearings on the "side chain" theory, the conception of haptochrome and toxophore groups, and the development of the science of immunity and serum reactions.

Thus, Wassermann has not hesitated to say that without this basic work of Ehrlich, he could never have hit upon the special and extremely reliable hemolytic reaction for the presumptive diagnosis of syphilis; a reaction which has added greatly to the wealth of clinical medicine.

Comcomitantly with the important work outlined above, Ehrlich found time and energy to devote to the problem of malignant disease. The histology of tumors was studied, and the experimental passage of tumors in

animals noted to increase malignancy, with the possibility of transforming carcinoma into sarcoma. Experiments in immunity and specific therapy in cancer were attempted.

Recognition of his work brought still further honors from learned societies and universities bestowed honorary professorships upon him. In 1904, Collected Studies on Immunity were published. He delivered the Croonian Lectures in London (1900); received the Gold Medal for Science from the King of Prussia (1903) and visited the United States on a lecture tour (1904).

About 1906, the George Speyer Haus was erected by Mrs. Franziska Speyer in memory of her late husband. It was here that Ehrlich found the opportunity and the resources to build up his system of chemotherapy. The work had as its basis, the experimental use of trypan red in trypanosomiasis. The choice of the infection, and the polyazo dye were of particular significance for the future of practical therapeutics. Further experiments with various elements as phosphorus, arsenic and antimony led to the true chemical nature of atoxyl, and opened the field to the innumerable combinations of arsenic in entirely new and active forms suitable for introduction into the living organism. Atoxyl, arsanil, arsacetin, arsenophenylglycin each led by actual attempt one to the other until dioxydiamidoarseno-benzol resulted from what Ehrlich termed: "Therapeutic biology."

It seems hardly fair to call the modifications of formulas leading to 606 "trial and error" experiments for in this, the fourth period of Ehrlich's work, one does not deal with result of happy accident, but with the almost logical conclusion of all the studies of the decades preceding. Paul Ehrlich was a pure scientist. It was his reasoning on disease resistance to antitoxins, and the need for drugs which would at once sterilize the patient's body of parasites without injuring the body tissues that led to the conception of "therapia sterilans magna" and consummated in the salvarsan series.

Salvarsan was patented in 1907, and used on animals for two years. In the animal tests, Ehrlich was assisted by Hata, an excellent co-worker who had been a student of Prof. Kitasato, with whom Ehrlich had been associated at Robert Koch's school. Kitasato had gone to Tokio, and founded the Institute for Infectious Diseases, which he directed. Hata had been sent to the Georg Speyer Haus in 1909 by Kitasato to experiment with the animal inoculation of syphilis in rabbits. It was Hata's fortune to supervise the infection and treatment of the animal with each new compound prepared by Ehrlich, and to repeat each therapeutic test until certain of the results. The diseases treated included: recurrent fever; spirillosis, and rabbit syphilis. It is difficult to



Fig. 3.—Paul Ehrlich in his study.

convey the magnitude of the work involved, with its infinite care, absolute accuracy, considerable labor, and great cost. Hundreds and hundreds of animals experimentally inoculated were treated with the newest preparation, 606, until even Hata became impatient.

Albert Neisser of Breslau, who had been sent to Java in 1907 to experiment on apes with the precursors of salvarsan, was entrusted with 606 in further experiments on apes experimentally inoculated with syphilis. Prof. Julius Iversen of St. Petersburg had shown that salvarsan was easily tolerated and Ascoli and Pasini of Pavia reported favorable results.

In September 1909, Ehrlich found in Conrad Alt of Uchtspringe a valuable and willing aid in the clinical trials of salvarsan.

Alt had had experience in treating paralytics with arsenophenylglycin, but spent three months investigating the newer preparation and its effects on dogs. When he was ready to inject 606 into human beings, two of his assistants volunteered to have themselves injected with this powerful drug. The procedure proved painful, but otherwise harmless, as it was then given intramuscularly.

Patients in Schreiber's clinic at Madgeburg were then treated, so that soon enough data had been collected to justify Ehrlich in publishing the results with salvarsan. With Hata and Schreiber, Ehrlich reported before the Congress of Internal Medicine at Weisbaden on April 19, 1910. It had been Ehrlich's intention, due to his extreme caution, to limit the circle using 606 to those already having had experience with it, but hardly had he closed his discourse at Weisbaden when he was besought verbally and by letters to distribute the drug. Ehrlich was unable to resist these pleas, and arranged for the distribution of salvarsan to all physicians known to him, or well recommended, who requested it. This method of distribution without taint of favoritism appealed to Ehrlich's sense of justice.

The facilities at Speyer Haus, however, were far too limited for the wholesale manufacture of salvarsan, which was necessary to meet the demand for it. In July, 1910, larger apparatus was procured, and two pharmacists assigned to the supervision of the preparation of salvarsan, with the entire chemical division of Speyer Haus devoted to its production. Despite this, it became necessary to limit the distribution of salvarsan, much to Ehrlich's regret, to those at home and abroad who were already engaged at controlled centers in therapeutic experiments. Certain unavoidable petty unpleasantnesses occurred because of this, which Ehrlich felt deeply. The appeals for salvarsan came from more than a hundred daily. Ehrlich had posted each day the number of doses sent out from the laboratory, and every so often would add up the figures on the inner side of one of his cases in the study. More than 60,000 doses of salvarsan were distributed gratuitously from June to December, 1910 to physicians all over the world! From time to time, Ehrlich would enquire of the recipients for reports on their experiences with the drug. He kept in touch with the good, bad, and indifferent effects. He sought the reason for every unexpected or untoward reaction. Every effort was made to determine whether drug, technic, or patient was at fault.

Visitors from every walk of life crowded Ehrlich's study. Physicians seeking advice, patients hoping for consultation (although Ehrlich never practiced medicine) and grateful subjects of the effect of his new drug came to his door, and were rarely turned away.

Before salvarsan had been distributed to clinicians, every assurance could be given that complete laboratory

ingenuity had been exercised to prepare a synthetic drug specifically for a given parasitical invader type in the human host. The preliminary clinical tests had themselves been extensive, yet all sorts of attacks were

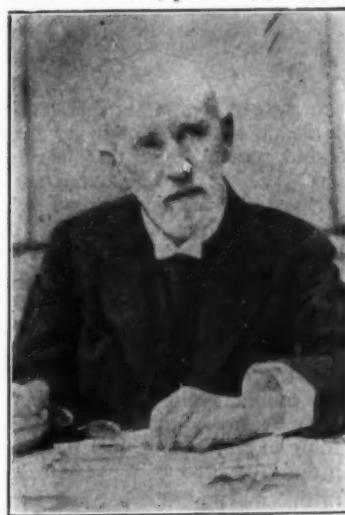


Fig. 4.—Paul Ehrlich's last photograph.

made against Ehrlich, his methods, his drug, and its results. All of these undeserved outbursts, truth to tell, mainly from those who had no experience with salvarsan fell upon the kindly soul of Ehrlich, and touched home each time.

The chemical genius behind the formation of salvarsan has been universally recognized. The work has added new territory to the domain of experimental pharmacology and therapeutics. It is impossible to estimate the contributions directly and indirectly dependent on Ehrlich's pioneering. A compilation of Ehrlich's personal literary contributions from 1877 to 1914 comprised 212 papers; with 400 written under his direction by assistants in his institutes.

Ehrlich was called to deliver the Harben Lectures in London in 1907. He shared the Nobel Prize with Metchnikoff in 1908. In 1911, he was named Geheimrat with the title of Excellenz. In 1914, the second class of the Red Eagle with the Star was conferred upon him by Emperor William. The Cameron Prize was awarded him by Edinburgh University in the same year. He was the recipient of the Grand Cross of the Orden Civil de Alfano XII conferred by the King of Spain. Recognitions such as these were held lightly, but membership in the select German Chemical Society was highly prized.

Ehrlich appears to have had one grand passion; his work. He was thinking of it, and dreaming of it. Every hour, his brain was evolving new ideas. In his conversations with associates, other than those trained with him, he appeared vague but only because he was in the realm of the heretofore unexplored to them, but Ehrlich spoke with the calm assurance of knowledge due to the fact that the problem in hand had been reviewed until it had become familiar to him. In his explanations, Ehrlich used chemical symbols, and would mark up any available space in books, journals, or menu cards. He used library cards, as we would call them today, of differing colors and with different colored pencils to note passing thoughts, directions for assistants, and plans for the future. Ehrlich admitted that he was a monomaniac; one thought possessed him above all other; his work. His secretary relates to us that he was apparently but not

(Concluded on page 188)

## Post Operative Treatment in Throat Affections

W. BYRON BLACK, M.D.,

Kansas City, Mo.

Medical men agree on at least one point: their patients do not like to suffer. Following tonsillectomies, both the local and general types, that sentiment is probably unanimous. We strive to make our patients just as comfortable as possible, and our method is here related. As a result, we have a large percentage of patients who go out with high praise for the way they have been treated, and they tell their friends and neighbors.

In the past, when the "kiddies" were operated upon, little was done to relieve their suffering. The doctor said, "Oh, they are just kids and will be well in four or five days." In the doctor's days tonsils were not removed and he cannot sympathize with the poor little things—with dry eyes, dry painful throat and unable to swallow anything except liquids for the prescribed time and that with difficulty.

It was with this in view that I decided to find something to help the "kiddies" as well as the "grown-ups." Our operations are performed in the morning and that afternoon when the nausea and vomiting are past, the nurse is instructed to start treatment as follows:

Formula "A,"  $\frac{3}{4}$  teaspoonful on back of tongue to hold in mouth, slowly lowering the head and turning from side to side to medicate each tonsilar fossa.

Formula "A":

Parathesin .....	5 ss
Acid Aceto-Salicylic.....	3 i
Acacia (Powdered).....	3 ii ss
Oleum Gaultheria.....	m xx
Aqua Mentha pip.....	3 ss
Syr. Pruni Virg q.s.ad.....	3 ix

Sig: Fiat Emulsio—Shake.

To be given on back of tongue every 3 or 4 hours by nurse.

This preparation should be made up fresh and kept in the ice box, as if it is not fresh and kept in a cool place there is a chemical change which impairs the therapeutic effect of the mixture.

Formula "A" is effective, as follows:

1. It takes away reflex pain to the ear.
2. It provides perfect anesthesia for the small sensory nerve endings that have been traumatized during the operation.
3. It has a sedative action on the neighboring mucous glands.
4. The small amount of aspirin in the mixture takes care of the febrile reaction.
5. It is a palatable preparation—children do not object to taking it. Additionally it is no small consideration to realize that parents are satisfied that you are doing every thing possible for their little ones.

Combine the uses of formula "A" with the ice collar, the colon flush, a soft diet and the children get along without suffering instead of remembering for years to come the terrible ordeal of having their tonsils removed. For adults:

Formula "B" (tablets):

Parathesin.....	gr. i
Acid Aceto-Salicylic.....	gr. ii
Acetanilid .....	gr. i
Oleum Gaultheria to flavor.	

Sig: One tablet to be dissolved on the tongue or crushed in the mouth t.i.d.a.c.

We have these tablets made up and stocked in the various hospitals where we operate, so that the medication can be begun about two hours after the operation.

The tablets are not swallowed, but are chewed or crushed and dissolved by the saliva and allowed to gravitate to the tonsils or fossæ. They give a great deal of relief, enabling the patient to take solid food of most any sort on the following morning.

In addition to the tablets, the patient is given a hypodermic of codein sulphate, gr. ss., every six to eight hours, an ice collar, a colon flush, etc. On discharge we ask the patients if the tablets assist. About 99 per cent say that they are a wonderful help. The second day we often hear the patient say, "Doctor, how about a spray or gargle for my throat?" We give them this mixture:

Formula "C":

Parathesin .....	5 ss
Glycerite Tannic Acid.....	3 iii
Liq-Alk. Antisepticus.....	3 ii
Phenol .....	m xx
Aqua Rosae q. s. ad.....	3 ix

M. Fiat Sol.

Sig. (Shake well). Dilute four times and use as gargle (hot).

Results:

1. Local anesthesia.
  2. Promotes healthy tissue healing.
  3. Astringent and antiseptic, preventing foul breath.
  4. Decreases inflammatory reaction of surrounding tissues.
  5. Patient better satisfied.
- 517 Shukert Bldg.

### THE ADVANTAGES OF PROPER DIAGNOSIS

S. J. ESSONSON, M.D.,

New York

I report the following case not on account of its rarity, because it represents a new condition, but one difficult to overcome. This case is only one of the hundreds which are treated for rheumatism, malaria, lues, etc.

It shows the importance of diagnosis by modern laboratory means, as well as the fallacy of assuring a patient that he is perfectly cured.

Two years ago I was consulted by Mr. I. B. 54 years of age. Occupation, merchant. Married 18 years; wife and children well and no sign of disease. He denies syphilis, but had gonorrhea nineteen years before, which was treated and pronounced cured.

This complaint was that during the past three years he suffered from pain in the upper extremities and numbness of the wrists and hands, especially during cold weather.

The numbness incapacitated him during the day so that he was unable to perform his duties and at night the pain was so great that it disturbed his sleep. He urinated at night at least twice, but there was no pain on micturition; sometimes an ardor urinae.

On examination I found heart normal; some moist vales on the chest. Blood pressure, systolic 164 and diastolic 95. Inguinal glands enlarged, the epididymis is thickened. By massaging the prostate, which was enlarged on the right side I could press out some fluid, which was examined and found doubtful gonococci. Compliment fixations test proved positive gonorrhea.

I made a second smear a few days later by massaging the prostate and gonococci were found.

After treatment by anti-gonococci serum and vaccine he got a discharge as in any acute case of gonorrhea, but the pain and numbness disappeared.

I added to the usual treatment of a chromé gonorrhea a pali-glandular serum and an arsenical preparation.

For two years the patient was feeling absolutely well.

1990 Seventh Avenue.

## Insurance—Its Medico-Legal Aspects.\*

HON FRANCIS R. STODDARD, JR.,

SUPERINTENDENT OF INSURANCE, STATE OF NEW YORK.

New York.

Law and medicine enter very vitally into insurance. The whole insurance business is conducted largely according to statute law. The law specifies how the company shall be formed, how deposits must be made, how much the capital must be, what kinds of business may be transacted, how the reserves shall be calculated, in fact, every step that has to do with the solvency of a company is controlled by statute law. The major part of my time is spent in interpreting the insurance law, and one of the most important duties of the Insurance Commissioners of the United States is to work for uniform laws which will insure equitable and uniform treatment to companies and their policyholders throughout the nation.

The medical profession has much to do with the classes of business which have resulted in the largest accumulations of funds. In ordinary life insurance, except group business, there is a physical examination which determines for the company whether the contract shall be made. At first, there was a tendency on the part of life insurance companies to believe that their functions were being fulfilled when they urged their agents, by promises of high commissions, to obtain all the business possible. In the year 1905, the Armstrong Committee investigated the life insurance companies and under the able guidance of our present Secretary of State, Charles E. Hughes, ended almost entirely the abuses that had formerly existed in the life insurance business. More and more the life insurance companies are looking to the doctors, not only to examine the risk, when the applicant first applies for his insurance, but after the risk has been accepted to help keep down losses by lowering the death rate. One of the most notable developments of medical science in recent years is the development of methods of prevention. Philosophers began to preach hundreds of years ago that an ounce of prevention is worth a pound of cure. The masses of people were slow to accept this fact which seems almost self-evident, and have been slower in guiding themselves accordingly. The problem is and was to induce people to adopt a program of prevention. Education has spread the truth of the necessity for prevention among the masses, but it takes something more to induce them to act. In order to get results in a large way, it has been necessary to change from retail to wholesale methods of prevention. This situation is evidenced by the following developments:

1. Organization of various societies and associations, such as associations for the prevention of tuberculosis.

2. Organization of a life extension institute. The chief purpose of such an institute is to make periodical medical examinations of subscribers and others who are eligible. A goodly number of life insurance companies now offer free medical examinations to their policyholders through this institute.

3. Welfare work of life insurance companies. The largest life insurance company in the world has taken the lead in welfare work, which may be classified under the following five headings:

(a) Education of policyholders in personal hygiene by distribution of specially prepared booklets and pamphlets to teach them the fundamentals of health and the prevention of dis-

ease. This particular company has millions of industrial policyholders, and, accordingly, a great number of such pamphlets are distributed.

- (b) Organization of a visiting nurse service to care for policyholders when ill, and incidentally to teach sanitation and hygiene. In communities where public nursing service has already been instituted, the company co-operates in such service for the benefit of its policyholders. This service is a great aid to the practicing physicians, and makes their work much more effective.
- (c) Co-operation with employers of labor in securing better working and living conditions for their people. Rapid developments along these lines have been made possible in recent years, owing to the fact that large amounts of group insurance have been issued to employers covering their employés. In this way, medical and nursing service has been made more effective and has been extended to thousands of persons who otherwise would not have received expert attention at the most opportune time.
- (d) Co-operation with health and other officials of states and cities to secure adequate legislation and appropriations for the conduct of constructive and progressive health work. In recent years this company sent a Commission to a city in Massachusetts, with a population of about 17,000 persons. It is said that every large employer of labor in this city now has a trained nurse. The medical and nursing service and preventive measures which have been adopted have resulted in cutting down the tuberculosis rate by 60 per cent and in reducing the mortality in the whole city by 20 per cent, according to information which has been furnished me. It is also stated that the mortality in other Massachusetts cities has not improved to nearly the same extent during the period in question.
- (e) Fighting unwise legislation. The company has successfully fought proposals to enact anti-vivisection and anti-vaccination laws in a number of states. It has aided in defeating attempts to break down legal requirements for certificated to practice medicine.

The life insurance company to which I have referred has assets of nearly \$1,500,000,000 and has built up its enormous business, based on the theory that it can make a saving for its policyholders by working for a lower death rate. This company does an enormous industrial business. The difference between so-called "industrial" and "ordinary" business is that the industrial policies are small, and payments are made weekly, while the ordinary business involves larger amounts and payments are made at longer stated intervals.

Theoretically, when a laboring man has taken an industrial policy, for which he possibly pays five or ten cents a week, the company need do no more than pay the amount promised when the assured dies. As a matter of fact, the company I mention has instructed its collectors to watch the conditions under which the family is living and to make helpful suggestions. If the representative of the company believes, for instance, that any situation is developing which may bring about disease or sickness, he will speak to the persons interestingly about the matter and will leave a pamphlet on the subject. It may be that a nurse will call. If the assured becomes ill, the company's agent will advise the obtaining of the services of a doctor, and will also deliver a pamphlet which will describe the illness and tell what precautions should be taken. If the mother is insured and is about to undergo the dangers of childbirth, a nurse will call and will talk to the mother about the precautions that should be taken. After the baby is born, the nurse, for several days thereafter, will assist by instructing the mother how to take care of the child.

\*Read before the Society of Medical Jurisprudence, New York Academy of Medicine, February 11, 1924.

None of this service interferes with the attendance of the regular doctor. In many cases the members of the family are reluctant to call in a doctor, and the effort of the company representative is rather to urge that the services of a doctor be obtained in necessary cases.

I am informed by the president of the company that does the most of this preventive work, that his company calculates that the saving in mortality more than makes up for the expense of millions of pamphlets and the hundreds of thousands of calls made by company representatives and nurses. We can thus see that in the realm of life insurance, also in health and accident insurance, that the preventive work of the doctors is one of the greatest items, not alone going to make a profit for the company but also making a real contribution to the longevity of the human race. I am not going to give you any figures, but if you are interested, I will tell you where to get them.

The physician who examines an applicant for life insurance performs a very important service. If his work is done carefully and thoroughly, it will save the company much litigation and loss from improper claims which would otherwise arise. The application usually contains a statement to the effect that the assured has made full and accurate disclosures in his application and in his answers to the questions in the medical examination blank, and that he has not concealed any facts. It is therefore of considerable importance for the medical examiner to ask the assured each question and require an answer thereto. The complaints often state, in cases where the companies refuse payment on account of previous illness, or unsound physical condition not having been stated in the application, that the condition of the assured was known to the medical examiner, or that the assured stated to him the fact that he had some physical defect. If the medical examiner should in any case know of physical impairments and fail to reveal them to the company, it may result either in fraud on the company, or else in loss to the assured or beneficiary.

The fact that physical defects were concealed in the application is usually brought out by statements of physicians filed in connection with the proofs of death. It is therefore apparent that in filling out proofs of death physicians should always be careful to state the exact facts, without exaggeration and without understatement.

The total and permanent disability clause in life insurance policies is a comparatively recent development. Claims filed under this clause would doubtless in all cases require statements of a physician or physicians. It is of particular importance that the statements of the physicians should be accurate in such cases. There will doubtless be many border line cases in which it will be exceedingly difficult to say whether or not the assured is permanently and totally disabled. In case of litigation, the testimony of a physician or physicians will doubtless be the controlling factor in deciding such litigation.

Until comparatively recent years it was difficult to rate substandard risks properly. However, the situation is greatly changed at the present time. The cooperation of physicians with actuaries has resulted in the development of fairly satisfactory methods of rating substandard risks, so that nearly every person, regardless of his physical condition, can secure insurance by paying the rate applicable to his risk. This is a big field and will doubtless be developed to a much greater extent in the future.

I understand there are laws on the statute books of more than half of our states which prevent physicians from testifying as to any information acquired in their professional capacity from or in regard to their patients. It is doubtless true that the insurance companies have found it necessary to pay or settle unjust or fraudulent

claims owing to the existence of such laws. It is asserted by those who are opposed to such laws that the facts communicated to a physician by his patient are not actually confidential except in a very few instances; that the inviolability of such confidences is not vital to the due attainment of the purposes of the relation of physician and patient; and that the expected benefit to justice through an accurate statement of all facts to the court or others is far greater than the violation of the relation of physician and patient.

In casualty and liability insurance, the services of the doctor are again important. In liability insurance, there is generally a claim made upon the assured, based upon an allegation of damages sustained by some injured party who believes that he has a right to make a claim against the assured, and against which contingency the assured is covered against loss. As you well know, except in the case of workmen's compensation, such claims may be either settled or tried in court.

The Workmen's Compensation Law, which became effective in this State in 1914, eliminates as much as is possible the personal factors going to fix the amount of the payment to an injured workman. Before the Workmen's Compensation Law, the amount paid to an injured workman depended largely upon the ability of his lawyer and doctor, and often upon their ability to misrepresent or exaggerate the facts of the accident. If the injured workman hired certain experienced, unscrupulous attorneys, the latter in turn hired doctors who were sure to make the accident seem so serious that the injured workman would be awarded a large verdict, about half of which would be taken by the lawyer. I have seen many of such cases, and I was impressed that perjury was at a premium. Injured workmen who really should have gotten verdicts were deprived of them because of the uncertainty of a trial, and other injured workmen who should have gotten small verdicts were paid out of proportion to the real injury suffered. The law now eliminates almost all of what formerly were defenses, and fixes the amount to be paid to the injured workman dependent upon his injuries as scientifically arrived at by the Industrial Commission.

While there may be criticism as to details of the law, I have heard no allegations that the law is not fundamentally sound in principle. I regret that something cannot be done to change the present situation as affecting other forms of liability insurance. If you drive an automobile and have an accident, you are in the position that an employer of labor was previous to the Workmen's Compensation Law. If you have sufficient insurance, your worries must be assumed by the insurance company, but if you have no insurance the size of the verdict against you, if one is obtained, depends largely upon your lawyer, and upon the injured party's lawyer, and upon the testimony of the doctors in the case. If the injured party has employed a doctor and lawyer who are inexperienced in such cases, he may suffer as a result.

I am informed that until recently no insurance companies were willing to issue a policy covering the street railroad companies because of the great number of accidents and the uncertainty of juries. I believe that a great step in advance will be taken when the only questions to be decided by a jury will be those of negligence and contributory negligence, and the amount of any verdict, if a verdict is to be awarded, will be settled by a commission like the Industrial Commission, which will make its finding based upon the methods now employed in Workmen's Compensation. I believe that passengers can agree in advance with a carrier that, in consideration of a reduced fare, any claims against the carrier might

be tried as above indicated. As between the carrier and someone with whom it stands in no contractual relation, the lawyers may be able to work out a way that would be constitutional or perhaps suggest an amendment to the constitution. There are too many accident cases in the courts and there is too much perjury in those cases. I believe that some such method as that described would better conditions for all concerned, except dishonest lawyers and dishonest doctors.

The part performed by the physicians and lawyers has an important relation to the business of insurance, and it is the duty of every physician and lawyer to promote and encourage the highest standard of ethics in this, as well as in the performance of his other duties. The Society of Medical Jurisprudence is ideally organized to assist its members in accomplishing this, and therefore this Society, as well as others having a similar purpose in view, are deserving of the support of these professions as well as the highest respect of the community.

#### Discussion

**Dr. Eden V. Delphey:** About twenty years ago, I was knocked down and a wagon ran over my shoulder. I was totally incapacitated for twenty-four hours and partially incapacitated for a long time thereafter. I believe that just as an injured person should put his case in the hands of a surgeon, so, if there is a liability for the injury, he should put that part of his case into the hands of an attorney.

In my case, the attorney brought suit for ten thousand dollars damages, and when I protested that I was not injured to that extent the attorney replied that the ultimate extent of the injury could not at that time be determined with any degree of exactness and that the amount sued for could always be lessened but could not very well be increased.

When the time came for the trial of the case, I told the attorney that I was not irreparably injured and that I had entirely recovered, and the case was settled for the sum of five hundred dollars. A few years later, I discovered that the fascia covering the deltoid muscle had thinned out, given way, thus producing a hernia of the deltoid muscle, and when I raised my arm against resistance there was a bulging of that muscle.

Since that time, I am convinced that the lawyer is the one who knows best about his own methods of procedure and is often not only right but is doing the best thing for his client when he makes a claim for a larger amount of damages than may seem just at the outset of the case, and at the time of the injury.

When the workmen's compensation law went into effect, I had been for some time the official physician and had attended to the injured workmen of a large factory and was paid therefore by it. The manager of the factory wrote to me stating that against their wishes they were compelled to insure in a liability insurance company, but if I wished they would continue to send their injured workmen to me for surgical care and treatment. I therefore continued to attend and treat such injured workmen and rendered my bill to the insurance company at the end of the month. A few days later a representative of the insurance carrier called on me and asked me to sign a schedule of fees which he said had been approved by the New York State Medical Society. I refused to do this, although the schedule was signed by a member of a committee which had been appointed "to confer with the various insurance companies and present the views of the medical profession in the matter."

Although appointed "to confer and present the views," neither the committee as a whole nor any member thereof had any right or authority to sign such a schedule of fees; and the schedule was afterward repudiated by both the New York County and State Societies. Nevertheless at a later date one of the insurance carriers had the audacity to write a letter stating that "the schedule of fees had the approval of the insurance carriers, the New York State Medical Society and the tacit approval of the industrial commission." I wrote to the Chairman of the Industrial Commission, repeating the above statement, whereupon the aforesaid chairman wrote a very strong and decisive letter denying that any schedule had even the tacit approval of the industrial commission; that in determining the charges it followed the wording of Section 13, of the workmen's compensation law, as follows: ". . . All fees shall be subject to regulation by the commission . . . and shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living."

Before the repudiation by the County and State Medical Societies, the representatives of the insurance carriers went about among physicians trying to get them to sign the schedule of fees, intimating that if they did so they would get compensation cases, whereas these representatives were simply trying to get as many physicians as possible to sign the schedule so that if by any chance the physician should get a compensation case he would be bound by it. Since that time, I have three times represented the County and State Medical Societies before the Industrial Commission and worked for over a year on "The Committee on Medical Questions" appointed by the Industrial Commissioner to consider various medical questions under the workmen's compensation law. This committee was composed of nine (9) members representing employers and insurance carriers, one (1) representing labor—for whom the law was especially enacted—and two (2) representing the general medical profession. Under such circumstances, it would hardly be supposed that the medical profession would be able to secure right and just recommendations from the committee, and the report at the end of the time amply justified this assumption. Moreover the insurance carriers slipped an amendment into Section 13 of the law requiring physicians to report the case to the employer and to the industrial commissioner within twenty (20) days from the date of the first treatment or his bill for services would be invalid as against the employer.

It is of course quite impossible to award exact justice under the compensation law; some are compensated too low and some too high. Under the law, if a man suffering an eye injury still has 20/20ths. central vision, although his field of vision may be limited to a few inches in the center of the field of vision, he has suffered no compensable injury.

There is a very interesting thing about mutual insurance companies and that is unless there is an influx of new and young members, the companies will soon be upon the rocks because every year that such a company lives without the addition of new members, the company will be just as many years older as it has members and consequently its expectation of life is just so much less. Under such circumstances, the distinguished speaker of the evening would soon be called to take action in the case; just as his predecessors have been compelled to do in such cases in the past.

**Alfred E. Ommen, Esq.:** I happen to be counsel for a workmen's compensation mutual insurance company and we frequently have business with the State Insurance Department. There has always been a readiness and a willingness to be of service. Any problems that are submitted to this department always meet with a ready response. During the past two years there has been some agitation with reference to workmen's compensation insurance, particularly to create a State monopoly; that is, to turn the whole business over to the State Fund. I should like to ask the State Superintendent whether from his experience he believes that it would be for the best interest of the State to eliminate all the stock and mutual insurance companies, the self insurers, and give this entire matter to the State Fund. The mistake I think the insurance companies often make is that they are rather severe and brutal in their policies and it only reacts on them. The Superintendent has told us an interesting story of the conduct of insurance companies, particularly in industrial insurance, in looking after the insured and caring for them. The courts recently, I notice, have been a little more liberal from the strict interpretation of representations made by the insured at the time he takes out insurance.

**Axel Josephson, Esq.:** I noticed that Mr. Stoddard twice spoke of both lawyers and doctors for the insured or claimants being guilty of aiding in the presentation of fraudulent claims. If the speaker investigated the actions of claim agents representing lawyers for insurance companies and doctors acting for insurance companies, I wonder if he would not find there is an equal amount or even more dishonesty on their part in the actions they take to defeat what very often are honest claims by the insured or claimant.

**John J. A. O'Reilly, M. D.:** When the doctor plays the game on the square and finds the Insurance Commission tolerates the lifting of his cases and turning them over to blanket contractors, human nature comes to the surface and he endorses the idea of throwing workman's compensation into the State fund. The doctors of New York State have been sound asleep and when they were awakened by the threat of the panelization of physicians they went to sleep again, saying nobody could do such a thing. So far as the compensation law is concerned, I hope the time will come when the workman who is the sufferer can have the power to say to whom he is going to entrust his sick body without being punished in his pocket, which is the state of affairs today in the State of New York.

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## Further Observations on the Cause and Correction of Cancer

HARRISON TAYLOR CRONK, M.D.,  
New York.

This article is third in sequence to articles appearing in the June and July MEDICAL TIMES.

Cancer is merely an exhibition of one form of living organism implanting itself upon another, with resultant death to the host, providing the invader be strong enough to overcome that host's resisting power.

The fact is as ancient as life itself. No theory of modern medicine can controvert it. Every attempt at cancer's extirpation has had that view in mind. Surgery, caustics, light rays; all lend tribute. In direct ratio with reachment have they been successful.

In previous articles I have named the protozoon, Trichomonas, definite cause of malignancy, as evidenced in what we term carcinoma and sarcoma. A word as to the derelictions of microscopic research may here be pertinent.

In the first days of microscopic research there appeared in the field many an unknown stranger. Some of these denizens of an ultra-world were more easily detained for observation than others. Those were the cocci and bacilli, easily fixed and stainable. Hence went the bent of modern microscopic research. Thence came our latter-day cultures, serums and antitoxins.

But the protozoa being more motile, and perishing and vanishing under staining process even when fixation was secured, have received the scant attention such elusive presences always receive in presence with more fixed competition.

Cancer presents as simple a picture, when we divest it of mystery, as does fungus growth upon plant life. The fact that the created tumor shows structural elements akin to the tissues of its host has been explained in previous articles by the simplest of natural processes—that of healing.

The parasite Trichomonas, finding vulnerable site for fixation, at once satisfies the blood lust necessary to its multiplication, and as it multiplies, protective cell growth follows. This continues with creation of a tumorous mass which exists in varying degree of growth until the hosts exhausted resisting power permits inroad of the common bacteria of suppuration with last stage picture of the disease.

Were we as skilled in the post-mortem discovery of healed cancerous lesions, existent in those dying from other cause as we have become skilled in location of healed tubercular lesions in the cadavers of those of non-tubercular demise, we would no doubt find that a very considerable number of those deceased from every cause had at one time been host to what we call cancer, in one or another of its forms.

The protozoa are quite as constant denizens of human habitat as the bacteria, with which we are so much more familiar. The more virulent protozoa, as we have come to know them, are tropical or subtropical in origin, though easily habituated to life in temperate climes under available hostage. Trichomonas may be so classed.

The prevalence of T. could be attributed to many causes. We might conjecture that as cancer's frequency has increased in ratio with the introduction of tropical fruits into our dietary, under civilization's increased com-

merce facilities; that is one cause. We might attribute its general presence to our colored citizenship—hosts of the hookworm and other parasites. General negro immunity to cancer reinforces such belief rather than disputes it, as students of immunity will confirm.

But granting the widespread presence of Trichomonas in the human organism as we must; acknowledging its proven blood lust as a necessity to propagation, considering its specific habit of wandering and clustering—so pathognomonic of malignancy; can we intelligently deny its association with the *red plague* that terrorizes life in its maturer years?

The cause of cancer is the protozoon Trichomonas. The cure of cancer rests upon destruction of that parasitic cause. Benign (except upon fixation) it may be disregarded. Fixed, however trifling the manifestation—and though fixation be only suspected, the only way to fight it is the fight of extirpation.

Surgery? Yes, when surgery will do. Light rays? Yes, when they eliminate, instead of aggravate. But always systemic medication that with true parasiticidal effect will reach the living thing that eats upon another, and destroy it.

My purpose in recommending intracellular injection (not intra muscular or intravenous) of employed remedies is the sensible one of avoiding the hazards of digestive chemistry. That this is achieved in the use of the combination I have referred to as AO has given me gratification.

The ingredients are almost as old as Adam. They do not have fancy names, to be sure, but they are *antiseptics*—*germicides*—*parasiticides* or whatever you may please to call them. They destroy Trichomonas and they do it without destruction or impairment of normal tissue, in direct ratio of their reachment, which is of course dependent upon available strength in which applied, status of disease, and latent resisting power of the medicatrix.

If present medical mystification as to malignancy's cause was viewed from the perspective afforded by the student position of ten years hence, much that is here written would seem so commonplace as to excite certain derision at former professional non-acceptance of truth so clearly written.

Cell madness, with only a dermoid cyst (result of absorption of a mis-spent twin into its fellow) to support its silly hypothesis, will be a ridiculous memory.

Irritation and nutrition as inducing factors to cancer's presence will hold the same old opposition to native medicatrix resistance they have held since the world began.

But the medical world will have awakened from its lethargy towards protozoic origin of disease. Supplementing the marvelous progress three decades have made in bacterial research, it will in that fourth decade recognize that true parasites of microscopic size live within the body, and under favoring condition, deal it destruction, even as now recognized grosser forms of parasitic life play all about, without and within.

Following appearance of my June and July statements in the MEDICAL TIMES, I have received a great number  
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## A Case of Full Term Pregnancy, Following Sterilization and Myomectomy

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ASSISTANT ADJUNCT GYNECOLOGIST, BRONX HOSPITAL  
New York.

Mrs. S. C., 37 years of age, had six children during a period of fifteen years of married life, two of which were of premature birth. She began to menstruate at the age of eighteen. Menstrual periods were always irregular, occurring every three, four and five months in intervals, eight and ten days in duration, profuse in character and rarely associated with any dysmenorrhoea.

Prior to the appearance of patient's first menstruation she consulted a number of reputable gynecologists regarding her amenorrhoea. All were unanimous in their opinion regarding the patient's genital anomaly, as far as fertility was concerned. They told her that she would be sterile the rest of her life, and, advised her to marry a widower with some children so that she might shower her maternal instinct upon somebody else's progeny. The physicians agreed that her uterus was of the infantile type and consequently gave the prognosis regarding conception accordingly.

However, the patient selected a single man for a matrimonial mate with the result that, in fifteen years, she was blessed with six children of her own.

Her profuse bleeding during the menstrual periods persisted until eighteen months ago, when she was operated upon for multiple uterine fibroids with cystic ovaries. The operation consisted in enucleating numerous intramural fibroids and a complete left ovarectomy for a cystic ovary. The right ovary was also cystic and a partial right ovarectomy was performed, leaving a small portion of this ovary in situ.

In view of the post-operative deep scars and the general condition of the uterus, it was decided that it might prove fatal to allow the patient to go through another pregnancy and labor. She was, therefore, sterilized by the following method: In addition to the complete left and partial right ovarectomy, a left salpingectomy was also performed, excising a wedge-shaped portion of the interstitial tissue of the left cornu and covering over with peritoneum. On the right side the surgeon performed a double ligation and excision of the tube, excising about one and one half centimeters of tube on either side of the ligatures and burying the free ends of the tube within the broad ligament.

The patient was assured that she would conceive no more. She menstruated one month after the operation and followed by three more menstrual periods that were of normal amount, three days in duration and without the slightest discomfort. When the fifth menstruation failed to appear she consulted the surgeon who told her that it might be the beginning of menopause. She was perfectly content until she began to feel active movement of the fetus. The operator was very much surprised when informed about her positive signs of pregnancy, as the sterilization had been performed according to the most reliable method.

The patient was admitted to the Bronx Hospital in the evening of March 11, 1924. On examination, she presented a large, pendulous abdomen. The vaginal outlet was markedly relaxed with a large rectocele and cystocele present. There was a vaginal septum which was pushed to the right side and apparently, had not interfered with the previous labors. The cervix was

lacerated and was about two fingers dilated. The membranes had ruptured spontaneously, before she entered the hospital. There was a vertex presentation which was unengaged with the head floating freely above the brim of the pelvis. She was in active labor and was having frequent and strong labor pains with thinning out of the uterine wall in several places. The question of a rapid termination of labor, so as to avoid a possible rupture of the uterus, was of prime importance to decide upon. To accomplish this there were two ways: Cesarean section, and the via naturales.

In view of the fact that the membranes were ruptured and one or two vaginal examinations had been made, I considered it quite risky to subject the patient to a Caesarean section and decided to give her a test of labor. A tight abdominal binder was ordered for her pendulous abdomen; morphin was given to stop her pains and to promote cervical dilatation. Two hours later the head was engaged in an occipito posterior position. Not caring to do a Pomeroy for fear of rupturing the damaged uterus, I delivered the baby in the occipito posterior position and excised the vaginal septum. The patient made an uneventful recovery.

### Comment

The object in presenting this case is to point out the importance of securing a successful sterilization in cases where this operation is absolutely indicated, such as post-operative, deep uterine scars.

The efforts and attempts to devise a certain operative method of sterilization without a hysterectomy or complete bilateral ovarectomy have so far been unsuccessful, as testified by reported numerous pregnancies following the most reliable methods for sterilization. The fact that there are so many operative procedures for sterilization is sufficient proof that none of the published methods are absolutely certain in their results, and is not as simple a procedure as one may assume.

Leonard (*Amer. Jour. Obst.*, 1913), discusses very extensively the various operative methods for sterilization, such as:

1. Ligation of the tubes.
2. Section and resection of the tubes between the ligatures,
3. Resection of the tubes between the ligatures with burr of the uterine ends,
4. Section of the tubes by means of the cautery,
5. Bilateral salpingectomy.
6. Resection of the interstitial canal by removal of a wedge-shaped piece of the uterine cornu, or the Neumann method, as the latter is called.

Sweifel and Thomas were the first surgeons who used the ligation of the tubes on a human being, during the course of a Cesarean section and for a short time this method gained extensive publicity, popularity and practical application. But the number of failures reported after its employment compelled the gynecologists to abandon this method as a failure in accomplishing successful sterilization.

The most striking evidence of the uselessness of the ligation of the tubes as a method for prevention of con-

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## Pneumococcic Meningitis

HYMAN I. GOLDSTEIN, M.D.,  
Camden, N. J.

Recently I treated a case of pneumococcic meningitis, type iv, in our service at the Philadelphia General Hospital, which may be of interest to those who have studied this subject. In the *American Physician*, we (Goldstein and Gonzalez) recently reported cases of pneumococcic meningitis with and without pneumonia, that occurred in the Philadelphia General Hospital during 1921 and 1922. We briefly reviewed the more recent literature on the subject, and called attention to the fact, that while nearly all cases prove fatal, there are some instances of complete recovery on record.

Dr. David Riesman in his paper on "Pneumonia"—"Diagnostic Problems" (*J. A. M. A.*, April 19, 1924, p. 1256); mentions a case of recovery from the combined use of Huntoon's antibodies and ethylhydrocuprein reported by Dr. John A. Kolmer, of Philadelphia.

Since the writing of our paper on Meningitis (pneumococcic) two other cases have come to our knowledge. One occurred in the service of Dr. Joseph Sailer at the Philadelphia General Hospital and one in our service at the same institution. We believe that the *early use of pneumococcic antibodies or antipneumococcic serum, pneumococcic serobacterin, and ethylhydrocuprein hydrochloride* (numoquin-Merck) and possibly the use of the *cisternal route* for therapy, as done by Ebaugh, holds out some hope in these very serious cases.

The report of the case occurring in our service follows:

### CASE REPORT

#### *Thomas S.*

Service of Dr. L. N. Boston; Ass't chiefs, Drs Blackburn and Goldstein. Interne—Dr. Dillard, Philadelphia General Hospital. Admitted 11/4/23; died 11/8/23 (Male, black, laborer, aged 24 years).

Diagnosis:—Meningitis, pneumococcic (type IV).

Autopsy No. 8185—11/8/23; Diagnosis:—Suppurative meningitis: Subdural hemorrhage.

Patient examined by Dr. Maurice Jaffe; District Physician and sent to Philadelphia General Hospital with the following history: Complains of headache; is now rather stuporous; diagnosis, old fractured skull.

Fell off roof about three or four months ago and spent six weeks at the Lankenau Hospital.

#### Receiving Ward:

Worked till Saturday. Then called doctor for headache and lumbago, of which he complains now. Was in Lankenau Hospital three or four weeks and on discharge was more stuporous than he used to be and has continued that way. Present marked stupor with staggering since last night. Temperature 101 in receiving ward. Says he had a chill before admission. (from brother).

### EXAMINATION

A young colored male lying quietly in bed, stuporous and confused, very restless at times.

Scalp: No scars, bruises or lacerations. No abnormalities.

Skull: No evidence of fracture. No exostosis or abnormalities.

Head: Normal size.

Face: Fairly well nourished. No flushing, Acne cederate.

Eyes: Pupils normal in size, equal and react promptly to light and accommodation. No edema of lids or ptosis. No palsies. Sclera bright.

Ears: Patient complained of earache last Friday night. Drums not seen. No discharge. No pain on motion. No pain on post auricular pressure.

Mouth: Lips and tongue dry and pissured. Marked evidence of fetor oris.

Tongue: Coated brown, fine tremor.

Throat: Injected. No mucous patches.

Neck: Moderate rigidity. Slight opisthotonos.

Chest: Expansion active and equal. Well developed. Resonance throughout. Some moist crackling at both bases. Vocal and tactile fremitus well transmitted.

*Heart:* Apex seen and felt 4, 11 cm. I.m.s.l. No thrills or shocks. Dullness 14 cm. I.m.s.l. Heart sounds are good. Regular in rate and rhythm. No murmurs over valve areas. B. Pressure 140/68.

*Abdomen:* Scaphoid. Soft. No abnormally palpable organs. No tenderness or rigidity.

*G. U.:* No abnormalities.

*Rectal:* No abnormalities on inspection.  
*Neuro-muscular:* Generalized muscular rigidity, especially of the neck and back, possible Brudziaski, bilateral Kernig, increased superficial and deep reflexes. No clonus.

*Diagnosis:* Meningitis (Meningococcic or Streptococcic).

11/5/23. 9 A. M.

Spinal drainage 25 cc. of cloudy fluid removed. Cells 1,100 white 11,363; polys. 96%.

1 P. M.

Spinal drainage injection of 30 cc. anti-meningococcic serum and 20 cc. anti-meningococcic serum intravenously.

11/6/23. 1 A. M.

Patient shows no changes 30 cc. Anti-meningococcic serum given intraspinally.

11/6/23. Anamnesis (brother).

Patient has always been in perfect health till August, 1923, when he fell from a house and broke his arm. Blood was seen coming from left ear but no complaint relative to cerebral pressure, etc. Patient was sent to Lankenau Hospital for fracture of arm. Discharged in three weeks. He did not seem natural after he returned home but was drowsy and talked very little. Returned to work and worked till Saturday night, 11/3/23, when he began to complain of "pain in back of head and back." Doctor in charge shook his head after he made an examination but didn't give out a diagnosis. Patient's mind became "foggy" and he entered Phila. Gen. Hosp. 11/4/23.

11/6/23.

Patient stuporous. Caloric requirement given by nasal tube. Stimulation ordered.

11/7/23. 1 A. M.

Spinal drainage 40 cc. cloudy fluid. Injection of anti-meningococcic serum 35 cc. Patient comatose. Temperature 102. Pulse good. No signs of pulmonary edema. Patient placed on abdomen alternating with the dorsal position to prevent as much as possible broncho pneumonia.

11/7/23. 3.30 P. M.

Cisternal puncture by Dr. F. G. Ebaugh 15 cc. of cloudy fluid withdrawn and 20 cc. of pneumococcic antibodies injected.

11/7/23. 9.30.

Spinal drainage 30 cc. injection of 20 cc. of pneumococcic antibodies, smear positive (+) for pneumococci.

11/8/23. 3.30 A. M.

Cisternal puncture by Dr. F. G. Ebaugh, cerebré spinal fluid under very low pressure, not so cloudy as on previous occasion. Injection of 15 cc. of pneumococcic antibodies.

11/8/23. Final.

Patient died this morning at 8.30.

Diagnosis: Meningitis-pneumococcic type IV.

11/5/23.

Spinal fluid; W 11,360, 96% polys. 4%.

Smear. No organisms-sugar—(globulin-heavy).

Blood—H. 110. W.B.C. 21,400; Polys. 91%. Mono & trans. 3%; Lympho. 6%.

11/5/23.

Spinal fluid (stain). No organisms found.

Blood—urea—14; uric acid 3.2; sugar 120.

Wasserman-cholestrin +; noguchi-negative.

Autopsy protocol—from the Pathological Laboratory of the Philadelphia General Hospital.

Autopsy No. 8185. Thomas S. 11/8/23. Six hours after death.

Performed by Dr. Bowman C. Crowell.

Admitted to Hospital 11/4/23; Died 11/8/23 at 8.30 A. M.

*Clinical Diagnosis:* Meningitis, pneumococcic, type IV.

*Bacteriological Diagnosis:* Heart blood: *B. coli communis*.

*Gross Anatomical Diagnosis:* Heart Cloudy swelling.

*Skull and Brain:* Fracture of left temporal region.

*Subdural hemorrhage and suppurative meningitis.*

*Aorta:* Fatty changes in intima.

Lungs: Bronchopneumonia-hypostatic. Lobular pneumonia-terminal.  
 Kidneys Congestion. Congestion.  
 Spleen: Congestion. Congestion.  
 Left arm: Healed fracture. Adrenals: congestion.  
 Brain: (see last page). Pancreas: congestion.  
 Liver. Congestion.

Cause of Death: Fracture of skull.

Thos S. Autopsy No. 8185.

Brain removed—weight 1300 gm.

The brain is normal in size. On examination of the contour one at once notes the marked contusions of the anterior two-thirds of the right temporal lobe, including all three convolutions. Also one notes small patches of purulent meningitis, which spreads over the under surface of the hemispheres.

The contusion as has been stated, involves the right temporal lobe in its anterior two-thirds and involves all the convolutions but they are not all contused to the same degree. The first and second are the most seriously marked. The surface appears as if the pia arachnoid had been adherent to the dura and had peeled off when the brain was removed. But in its most superior portion, the contusion has been more serious. There is an area 3 cm. long by 1½ cm. wide, elliptical in shape in which the area is a dirty red. Also a smaller area is noted just above the other, but in the parietal lobe, that is just above the sylvian fissure, this measures one and a quarter cm. in cross section and is circular in outline.

The pia arachnoid is milky over the convexity of the brain particularly along the vessels as they course over the brain. In addition to this milky appearance one notes in the area extending out from the interpeduncular space in the sylvian fissure, small areas of pus under the arachnoid. The small areas of pus are very marked about the interpeduncular space and also back on the pons and cerebellar hemispheres on their inferior surfaces. Also adjacent to the olfactory tracts that is at the tips, there are minute patches of the pus exudate. In a like manner these small areas are apparent on the lateral surface of the brain about the sylvian fissure.

The surface of the brain also shows dusky red discoloration at the tip of the frontal lobes more marked on the right side. Smaller areas are noted on the right frontal lobe.

The vessels coursing over the convexity of the brain are engorged. At the base they are bound by the exudate. In color they are a whitish tint.

It should have been stated that the pia arachnoid sort of rides on the fluid which fills up the sulci. There is thus a general edema.

On removing the brain from the skull the following was noted:—Lying over the lower portion of the left frontal lobe and clothing the left middle fossae was a blanket of congealed blood about ½ cm. thick. Also about the bulb was a clot.

In the right middle fossae the dura presented a yellowish discoloration as if old blood clot which had almost been absorbed. This was immediately adjacent to the right temporal regions, which have been described.

At the tip of the right frontal fossae, there was also a small area of deep red discoloration, which was adjacent to the area described on the tip of the right frontal lobe.

When the dura was removed from the internal surface of the skull, a fracture was noted running down from the parietal lobe where it originated as a T shaped fracture, the limbs of which spread out, backward and forward on that portion of the parietal bone where the convexity is the greatest. These limbs measure about 5 cm. in length and can only be discerned on careful examination. Then from the middle portion of the T, a short spur 3 cm. in length projects still further toward the medial line and is lost. Now as has been stated the downward portion of the T extends down into the temporal fossae, where it splits in the form of a Y. The posterior limb apparently penetrates the middle ear and extends medially almost to the posterior clinoid process. The anterior limb is short, 2 cm. in length and is deflected to the anterior portion of the left temporal fossae. This portion of the fracture in the middle fossae and ascending limb is, very easily made out and there has been no union while in the transverse portion in the parietal lobe there has been partial union.

The needle hole from the cisterna puncture is in evidence on the lower and posterior portion of the basilar portion of the membrane clothing the skull. No clot was evidence in the cisternal region, such as one notes at times after such a procedure.

Diagnosis:—1. Fracture of the skull (lower parietal, temporal and into the middle end on the left side).

2. Contusion right temporal lobe.

3. Petechial purulent meningitis about the base and over the lateral surface of the brain, also scattered over the inferior surface of the brain as a whole.

4. General edema of the brain with area of inflammation.
5. Subdural hemorrhage.
6. Thickened pia arachnoid.

In further description of the basilar region and the pons and the medulla. It should have been stated that on the dorsal surface of the pons and medulla under the pia arachnoid there is noted a well marked hemorrhage. This appears on the left side. Measures about ¼ cm. wide and begins about the level of the pyramids and ends at the level of the middle of the pons. In the lower portion a small part of the clot lies on the right side. It lies in close association with the basilar artery.

Examination after hardening in formalin by Dr. Winkleman: Its description is as above noted, a typical purulent meningitis with areas showing evidence of trauma.

On transverse section yellowish pus is seen in the ventricles. Congestion marked, petechial hemorrhage present in the areas described. Also in the areas described where the contusion has taken place cortex is definitely involved in the lesion made evident by softening.

#### Diagnosis—Purulent Meningitis

Microscopic examination by Dr. Stack: The pia arachnoid is heavily infiltrated with polynuclear leucocytes, gitter cells and endothelial cells and some leucocytes.

In one section there is seen an area where all ganglion cells are gone, gitter cells and endothelial cells are present in abundance. The capillary endothelium is greatly swollen. To the periphery of this area a general increase of glia is present.

Other cortical sections contain only neuronophagy.

Diagnosis:—Purulent meningitis.

Cortical softening.

Histology: Dr. Smith.

Lungs:—Many alveoli are filled with serum red and white cells. Circular clear spaces exist in the midst of the exudate. Blood vessels are all congested. Bronchioles are either entirely clear or contain a small amount of serum and red and white blood cells.

1425 Broadway.

#### Specific Aortitis

W. D. Reid writes interestingly on this subject. Specific aortitis has been found 54 times or in about 3.5 per cent of the 1,678 autopsies (Jan. 28, 1919) at the Massachusetts General Hospital. In 40 of these cases aortitis was the primary cause of death, and in three of the fourteen remaining, in which this disease was listed as a secondary cause of death, the syphilitic process was advanced to a serious degree. Oberndorfer reported syphilitic aortitis in 7 per cent of 1,437 autopsies, Gruber, of Strassburg, in 4.5 per cent of 6,000 cases, while Marchand, of Leipzig, in 256 post-mortems of syphilitics with the acquired form of the disease, found syphilis of the aorta in 211 (about 82 per cent), and in 67.4 per cent of autopsies on congenital cases.

In a personal conversation R. D. Leonard, Boston radiologist, stated that in something over one hundred cases of bone syphilis examined at the Boston City Hospital, Roentgen examination of the arch of the aorta disclosed evidence of aortitis in 75 to 85 per cent. Denke is of the opinion that, in adults, syphilis doubles the mortality of diseases of the circulatory system.

It seems best not to give more than a brief account of the history of the development of our knowledge of specific aortitis. To those interested in more detail I would refer to the article in Sir Clifford Allbutt's book, and in fact this author's painstaking chapter on aortitis may be read in toto with profit.

Allbutt quotes Lancisi in 1724 as associating "aneurysma Gallicum" with "impure coitus" and signs of syphilis elsewhere in the body. In 1866 Wagner contributed an accurate macroscopic study, but the disease was still confused with atherosclerosis until Dohle, in 1885, wrote his description of the gross and minute appearance of disease of the aorta in a young man with unmistakable syphilis. It is to the English physician, F. H. Welch, that Allbutt gives the credit of establishing our full knowledge of specific aortitis. Welch read his paper in 1875 upon 117 cases of "fibroid aortitis" in 46 per cent of which there was a clear record of syphilis.

The spirochete in the aortic wall was first demonstrated in 1906 and 1907 by three European observers, Reuta, Benda and Schmorl, and in 1909 Wright and Richardson recorded the first cases in America. In 1914 Cabot in proposing a new classification of cardiac disease, suggested "syphilitic" as one group. And in 1916 Warthin published his startling paper in which he reported that in the pathological service of the University of Michigan from 1912 to 1914, one-third of all the autopsy cases on adults (41 in all) showed active syphilis on microscopic examination, and in 88 per cent of these there were syphilitic lesions in the heart.—(Boston Med. & Surg. J., 3, 67, 74.)

## Periocular Puffiness ("Crow's Feet") Fatigue and Ocular Disturbances—Manifestations of Nasal Congestion

E. M. JOSEPHSON, M.D.,

New York

Periocular puffiness, or discolored rings about the eyes, commonly termed "crow's feet" is a disagreeable type of disfigurement which is especially annoying to the female, but is also disturbing to the male because it lends an appearance of illness, fatigue or dissipation. Many individuals whom the writer has seen complain of these rings as a permanent and fixed affliction, while in others they come and go with fatigue, emotions, sexual cycles and climatic changes. There is frequently associated a history of ready fatigue, nasal stuffiness, headaches and eye-strain. When the condition has existed for any length of time there is frequently formed about the eyes, flabby bags of skin which form a permanent and unsightly disfigurement.

This condition has received practically no attention in the text books, even though it deserves consideration from the cosmetic point of view alone. The associated symptoms, however, even further enhance the interest with which these manifestations must be viewed.

Upon careful study of a fairly large series of these cases it has been found that the underlying pathology of these periocular rings is varicosities and a varying degree of congestion in the richly anastomosing plexus of veins in the lids and the periocular region. These venules can readily be seen when the overlying skin is placed under tension. The course of the main vein draining the plexus may be outward to the temporal region, or inward toward the root of the nose, but most frequently is downward. Of especial interest was a case observed by the writer of a large and disfiguring varicose plexus over the region of the lacrimal sac and duct which necessitated the operative removal of the sac. Tracing the vessels which form these varicose rings it is determined that they form a part of a profusely anastomosing plexus of nasal ethmoid and orbital veins which communicate with the vessels of the brain, above, and drain into the vessels of the face and neck below.

Seeking for the cause of the intermittent congestion of the plexus, the formation of the varices, etc., it was found that the only constant findings in these cases were nasal affections involving the ethmoids and the middle turbinates. Hypertrophy, swelling or congestion of the middle turbinates were almost invariably found to be present. The periocular puffiness was found to vary directly with the changes in the vascularity of the ethmoid and the middle turbinate. Manipulation of the middle turbinate induced ring formation, and (in cases presenting normal ethmoids) adrenalization which brought about a reduction in the turbinate swelling, or removal of the middle turbinates with or without uncapping of the ethmoid cells, caused a reduction in the extent of rings.

Conditions affecting the formation of the rings might be classified as follows:

A. Nasal.

- I. Conditions involving the ethmoid and middle turbinate indirectly, viz., deviation of the septum, foreign bodies in the nose, adenoids, inflammation in other parts of the nose, etc.
- II. Changes in the ethmoid cells and the middle turbinates.

- a. Malformations—congenitally large and misformed bulla ethmoidalis, turbinate, etc.  
Neoplasms.
- b. Inflammatory—ethmoiditis, rhinitis, etc.
- c. Physiologic conditions affecting the vascularity of the nose.
1. Fatigue induces in the nose a vascular relaxation which results in a swelling of the turbinates. Vice versa, the nasal condition, i. e., swelling of the turbinates induces a feeling of fatigue, and frequently a moderate reflex rise in blood pressure,—a vicious circle.
2. Atmospheric conditions affect the vascularity of the nose.
3. Sexual Cycle. The vascularity of the nose varies with the sexual cycle and is affected by sexual and emotional activities. Thus at the period of menstruation, congestion may be so high in the nasal mucosa as to induce epistaxis and vicarious menstruation.
4. Physiologic diurnal variation in nasal and visceral vascularity.
- B. Vasotonic changes affecting directly or reflexly the tonus of the vessels of the periocular plexus.
- C. Pathologic conditions affecting the general circulation or affecting the local circulation in adjoining parts, viz., the chronic passive congestion of cardiac disease, the stasis of cavernous sinus thrombosis, etc., act as predisposing factors in the production of the symptoms under discussion.

The symptoms, headache, fatigue and inability to concentrate, are associated with a feeling of stuffiness in the nose and obstructed inspiration. This may be readily explained by recent studies on the air currents in the nose which have proven that the major portion of the inspired air passes through the middle meatus. The middle meatus is formed by the middle turbinate, and is consequently affected by changes in the size of that structure. Blocking of the meatus by swelling of the turbinate, reduces the inspiratory passage and diminishes the volume of inspired air.

The pressure of the turbinates also give rise to reflex neuroses. The diminished ventilation of the lung and body, plus the reflexly produced reactions (neuroses, spasms, moderate heightening of the blood pressure, etc.) in a large part account for the symptom of ready fatigue, and render superfluous the hypothesis of a fatigue toxin which is generally thought to be necessary to explain this symptom. There may be, however, an absorption of toxins from the obstructed nasal cavities, especially when there is present a nasal infection; and in addition there may be a collection of incompletely catabolized end products of metabolism due to diminished lung ventilation consequent upon nasal obstruction which, accumulating in the blood, gives rise to toxic manifestations.

An interesting feature of the fatigue, headaches and ocular changes associated with the conditions under discussion, is the rapid dissipation or relief of the symptoms following the reduction of local congestion by either local or general medication, or rest in the reclining position.

(Concluded on page 191)

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## What the Moron Buys

Nascher has suggested that the "buying behavior" of the moron might be made to serve diagnostic purposes. The moron buys like a child, Nascher points out, that is to say, instead of buying useful or beautiful or cultural things he tends to buy things that would give a kind of momentary pleasure to a savage. "He will prefer the highly colored chromo to the painting or etching, the noise of machinery or the brass band to the music of the symphony orchestra, strong odors to delicate perfumery." Comparative values mean but little to him. "The character of the things that the moron wants to acquire, compared with the character of the things that he could acquire just as readily, may be a diagnostic point in determining degrees of defectiveness."

An easier angle from which to study this question is furnished on a large scale by morons in the mass. The "buying power of the moron," as it has been happily phrased by Mr. James Edwin Meade, the dramatic critic, betrays whole hordes of defectives. It is this which determines the character of much of our drama and literature and nearly the whole sweep of the movies. Movements like that of the Ku Klux Klan, the "sale" of race prejudice, the staging of lynchings and revivals, and the ignition of war are made entirely intelligible when surveyed from this angle. When such things can be "sold" to whole masses of men there must be profound degeneration. It is extremely doubtful whether any kind of a war could be started or prosecuted for any length of time without making the moron class bear the chief civil and military burdens. It is the existence of this class which makes the whole program for world peace chimerical.

No labored argument is necessary to show the character of the politics and government which can be "sold" to the morons of the country at any time by either of the great parties.

Perhaps most revealing of all is what morons buy in the newspapers. How to sell news to morons and their numerical ratio to other groups in our communities form important elements in the curriculum of every school of journalism. Nothing is better understood in any newspaper office. There is no mystery as to what is the matter with the newspapers, but with things as they are how could practical men run them otherwise than they do; they did not create the moron class, and that class exists for no other reason than to be exploited.

It seems to us that medical men are taking up the diagnosis of the moron rather late. The manufacturer of unnecessary things classified and labeled him long ago.

## Better Care for Convalescents

In a special report of the Public Health Committee of the New York Academy of Medicine the problem of convalescence is characterized as a neglected phase of medicine. "There has been no serious discussion of the kind of care which the various types of convalescent patients require. . . . There has likewise been no thorough consideration of the types of cases which should be cared for jointly, and which would harmonize from an administrative and medical point of view."

It appears that funds of the Sturgis and Burke Foundations are available wherewith to create a central reference bureau and clearing house and to enter upon research calculated to reveal actual needs, to frame policies, and to develop standards.

The Academy's preliminary survey has already shown that existing facilities are not fully utilized, for reasons that it is hoped can be remedied.

It seems to us that proper development of convalescent home outlets will not only result in great benefit to those discharged from hospitals but requiring further care, but that it will shorten the stay of many patients now constituting an undue burden upon such hospitals and upon the City, in so far as the cost of such delayed dismissals is borne by the Department of Public Welfare.

## Common Sense and the Surgeon

On more than one occasion we have protested against certain surgical practices which have seemed to us inimical to the welfare of patients. Now comes Dr. George de Tarnowsky (*J. A. M. A.*, May 10, 1924), himself a surgeon, as a vigorous protestant against similar evils. He declares that preoperative starvation, purging and frightening are potent factors in the causation of post-operative shock, intestinal paresis and protracted convalescence. Too many persons are obsessed with the belief that the preparation of the field of operation, carried out with a ritual that makes a Greek Church high mass look simple by comparison, will in some mysterious way prevent postoperative shock and intestinal paresis. In the observance of this ritual there is an enormous wastage of towels, sheets, suture material and solutions. If the surgeon, blindly relying on the sacrosanct multiple draperies with which we surround the operative field, traumatizes the intestinal tract while operating on abdominal or pelvic organs, paresis and gas pains will inevitably follow. The doctor has no use for postoperative therapy directed toward increasing peristalsis. Overzealous anxiety to have all patients promptly evacuate their colons postoperatively is comparable to the idiocy of the obstetric novice who institutes manual expression of the placenta when there is no clinical indication for so doing.

Intestines traumatized by operative manipulations need physiologic rest. The doctor takes a crack at the belief that a colonic tube, properly inserted, will remove gas that the patient is too weak to expel unaided. As for the rectal drip, the conviction is growing that it tends to produce reverse peristalsis of the descending colon, with gas retention. Warm fluids, by mouth, should be given as soon as the patient is able to swallow; emesis is usually no contraindication to this method; it is much easier on the patient to vomit fluids than to retch on an empty stomach; anybody who has ever been seasick will agree with this statement. And just as there is no logical reason for preoperative starvation of patients, so is there no argument against a reasonably prompt return to a normal diet after operation.

All of this, it strikes us, is simply common sense. What is the good of all the technique of modern surgery if this element be lacking? That it frequently is lacking is a fact patent to the kindest observer. Our own criticisms have been motivated solely by the spectacle of bedeviled victims, and have pertained chiefly to the maddening and exhausting fussing before and after operations. We are glad indeed to note a disposition on the part of the surgeons to see themselves as others see them.

#### The Fatigued Girl

Dr. Clelia Duel Mosher of Leland Stanford University does well to emphasize the fact that nervous bankruptcy is being courted by the young women of to-day.

The average young woman keeps up the maximum effort with the minimum reserve.

In her desire not to miss anything she burns the candle at both ends.

She increases her periods of activity to a point where sleep is greatly curtailed, and it is this loss of sleep which is the chief cause of her fatigue, since just so much time needed to repair and to rebuild the used-up cell substance is taken away.

This young woman may not be killed by the pace, but she becomes a recruit for the army of semi-invalidized middle-aged women, the despair of physicians confronted with problems which began ten years before they were presented to them.

"The problem of sleep and the problem of health," says Dr. Mosher, "are solely interwoven. To miss a couple of hours' sleep at night seems trivial. Yet losing an hour's sleep at night means the loss of seven hours' sleep each week, the equivalent of about one sleepless night per week, or forty-eight sleepless nights a year. On begins to realize the handicap this means to the growing girl, who must rebuild and repair what has been used in her over-active day."

What these girls need is nine hours' sleep every night, in a well ventilated room. Less rouge and lip-stick paint will then be needed.

## Miscellany

Conducted by ARTHUR C. JACOBSON, M.D.

#### You Can't Sidetrack Them

The following story, told by Rear Admiral John K. Robinson, is decidedly apropos of our specialist friends who can be depended upon to introduce their subjects at any kind of a medical gathering:

"Down in Virginia there was an old friend of mine who was very potent at after dinner speaking. He had only one speech, in which he always glorified Patrick Henry, his own particular hero among the many Virginia has given.

"Some of his friends, perhaps a little bored at the oft-repeated story which always wound up in 'Give me liberty or give me death!' put up a job on him one night when he was called upon without previous notice to speak on the subject of horse colic.

"My friend was equal to the emergency. He arose and addressed the audience about as follows:

"Gentlemen, this subject is one of much more importance than you believe. It affects the cost of transportation, the reliability of communication and it has a definite effect upon the cost of living. Horse colic consists of millions and millions of little microbes within the body of the horse, each crying out the words of the immortal Patrick Henry, 'Give me liberty or give me death!'"

—Philadelphia Ledger.

#### The New Sick

We had to coin the phrase, "the new poor." Now we have to confess the presence of the new sick. In the *New York Times* we recently encountered the following item:

An "epidemic of injuries," superseding the past "epidemic of infection," is the problem with which the modern physician has to cope, said J. Howard Beard of the Health Service of the University of Illinois, speaking before the American Medical Association convention.

Railroad crossings, automobile accidents, exhaust gas poisonings caused by automobiles, industrial accidents and suicides caused by the increased strain of living in cities were taking the places of old-time menaces, conquered to a great extent in the times of Lister, Gorgas and Pasteur, he added.

"The suicide rate is about that of the whooping cough death rate," he continued. "About as many people were killed in automobiles at railroad crossings last year as died of scarlet fever in 1920. Fatalities resulting from auto accidents in 1923 are about the same as those from diphtheria and scarlet fever combined. In some of the more sanitary cities exhaust gas from automobiles produces more deaths than typhus bacilli."

#### Paul Ehrlich

(Concluded from page 177)

actually, the traditional "absent-minded professor." His personal attire received scant attention. He wasted little time on etiquette, but was nevertheless beloved by all who came in contact with him. His simplicity was child-like at times. He had no interest in the arts, poetry, or conventional music. He enjoyed romantic novels, and detective stories of the dime novel sort, or penny terribles. The tempo of turbulent music appealed to him, and hurdy gurdy stuff brought him enriched thoughts for the problem at hand. He would pass up and down in his study by the hour while his wife or father played popular waltzes on the piano in the next room.

Ehrlich enjoyed food and drink, but seemed independent of either. Cigars were the only luxury he was unable to deny himself, and he had a standing order for the delivery of a certain very strong brand. On his trips abroad, he provided himself with this brand rather than depend on what he might procure in foreign climes.

In his home life, Ehrlich was guarded by a good wife, who sought successfully to protect her husband from the petty cares of household functions. His parents lived to old age, much to his satisfaction. He had two daughters, both of whom married. Of an even temperament, Ehrlich lived his own life, apart from the ordinary stress, except that he felt the criticism of those who opposed him as undeserved. He was grateful to the men who had made it possible for him to go on, and numbered among his friends, Weigert, Heidenhain, Frederichs, Waldeyer, Koch, Althoff, and Neisser. Ehrlich was charitable to a fault, and could rarely refuse requests for

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aid. He encouraged his assistants and associates. At his sixtieth birthday, the *Festschrift* prepared in his honor drew contributions from scientists of all parts. Tribute came freely for that uniquely fertile and versatile career of research which made Ehrlich one of the most original and picturesque investigators in natural science.

So the backward boy student had become a leader of men of knowledge!

The last year of Ehrlich's life was the first year of the World War. Great plans had been made for enlarging the laboratory and offices, and these were being fulfilled, but never to be enjoyed. Ehrlich was losing weight. His hair was rapidly turning grey. His skin appeared cachetic. Dietary restrictions were put upon him because of diabetes.

The high degree of tortuosity of the temporal arteries increased. The man was not himself. He suffered a slight attack of apoplexy during the Christmas season of 1914, from which he recovered, but he never completely regained the spirit of living.

Ehrlich regretted the state of war, and thought it unnecessary. The facilities of his plant at Frankfurt were devoted to the preparation of protective serums for soldiers. Ehrlich did little work himself, although his study was reserved for him. He failed rapidly, and was removed to a sanitarium, where his death was not unexpected. He died painlessly on August 20, 1915.

The world engrossed in war scarcely knew of his passing!

15 Central Park, W.

#### **Further Observations on Cancer**

(Concluded from page 182)

of letters from colleagues evidencing a cordiality of thought which is greatly appreciated.

It must become apparent to this large and interested number that statement of progress made in applied medicine as well as in further protozoologic research had best be held within the confines of the profession and its press. So much has recently appeared in the lay press that is without scholastic foundation, it would seem the less said at present about cancer publicly, the greater would be popular confidence when later developments are presented without stigma of immature announcement.

In a future article I will take up exhaustively the subject of cancer infection and I believe my readers will find therein strong reinforcement of any growing belief they may have as to Trichomonas as a causative factor.

12 Fifth Avenue.

#### **Pregnancy Following Sterilization**

(Concluded from page 183)

ception is the case reported by Taylor, published in the *Medical Press and Circular*, in 1904. He performed two Cesarean sections on a rachitic dwarf, tying off the tubes during each operation. The patient again became pregnant and a third Cesarean section with a double salpingectomy was performed.

Failing to effect a successful sterilization by simple ligation of the tubes, Kehrer modified this method by cutting the tubes between the two ligatures. This modified procedure likewise failed to effect sterilization, as evidenced by the case reported by Abel; where the patient had her tubes ligated and cut through during two successive Cesarean sections. At her third operation both tubes were found to have become reunited and one was patent throughout its entire length.

Ligation and resection of the tubes between two non-absorbable ligatures with burial of the uterine ends was

demonstrated to be a method of uncertainty, as reported by a few cases from Bonn's clinic. One of these patients had a Cesarean section for a contracted pelvis, presented herself again pregnant and consented to a second laparotomy on condition that she be sterilized. The sterilization operation was performed by resecting two centimeters of each tube between two non-absorbable ligatures and the uterine stumps were buried and closed over carefully with peritoneum. This method was considered certain for accomplishing sterilization. One year later the patient became pregnant and a therapeutic abortion was performed.

Bilateral salpingectomy as ordinarily carried out, leaving a short stump at the uterine end, is not a protection against future pregnancy. This was demonstrated with the case of Polak who operated on a patient who had been sterile for a number of years, due to a double pyosalpinx contracted shortly after her marriage. He performed a double salpingectomy, leaving a short stump which was carefully ligated at each cornu. A few years later this patient had an interstitial pregnancy on the right cornu.

The most complete method for sterilization is the procedure devised by Neumann, which consists in the resection of the interstitial canal by the removal of a wedge-shaped piece of the uterine cornu after ligating the tubes near the uterine end and bringing muscle and peritoneum together and covering the small raw surfaces with the peripheral portion of the tubes.

Effective as this method may appear yet it is not altogether infallible. Kurstner has reported two cases of pregnancy following the Neumann's method for sterilization.

#### **Conclusion**

The methods enumerated above, as well as my own case, where an accepted method was carried out, stand out pre-eminently as unsuccessful in effecting sterilization. The question arises—what is to be done with the female patients in whom an effective sterilization is a question of life and death? After all, to bring about a successful sterilization when it is indicated, is more important than to cure sterility. To cure sterility, after all, is a question of satisfying a sentimental maternal instinct to perpetuate her progeny, while to effect an absolutely secured sterilization involves the very life of the mother.

It is perfectly ethical to sacrifice the fetus when the life of the pregnant mother is in danger. It is also consistent with medical ethics and legally permissible to perform the most extensive operation when the life of a patient is jeopardized. Why not do a more extensive operation in order to effect a successful sterilization, such as hysterectomy, or a complete double ovarectomy, rather than do a small operation and jeopardise the life of the patient by the possibility of future pregnancies, in view of the fact that none of the accepted methods is absolutely effective in its results?

#### **Protozoal Infection and the Relationship to Dysentery**

G. Milton Linthicum of Baltimore gave the American Protozoological Society a historical synopsis not alone for its interest, but to associate it with the present recognized classification of Ciliata, Flagellata, Amoeba and Coccidia. The life history of the various groups, calls attention to the cycle completed within the host; the feeble vitality of the organism outside, as contrasted with the virility within the tract; the manner of dissemination by the cysts alone, and the danger of unbroken sanitary provisions. Danger of epidemics of infection is slight, while increased number of cases are to be expected, as travel in the tropics increase. The possibility of protozoal infection is suggested in chronic or intermittent diarrhoeas. Parasitism is a term not applicable to all the protozoa as it suggests baneful influences while only the *Amoeba histolytica* and *Balantidium Coli*, have been incontrovertibly proven guilty.

## Massage in Sprains, Bruises and Dislocations

(Concluded from page 172)

small and shallow glenoid cavity. I have recently had a patient who could throw the head of the humerus downward for a considerable distance at will and then jerk it back again.

As it does not seem to be generally understood how

Kocher replaces the head of a humerus that has been displaced inward and forward, it may be amiss to reproduce here the following pictures which show in a clear and interesting manner the method and its rationale:



FIG. 5.—The arm is adducted until the elbow touches the side of the chest; no marked difference is seen in the position of the head of the humerus.



FIG. 6.—The still adducted humerus is fully rotated outward by means of the flexed forearm; the rent in the capsule is more plainly seen; the head is nearer the acromion and farther from the brachial plexus.



FIG. 7.—Whilst retaining the adduction and outward rotation, the arm is fully elevated and brought forward.

## Insurance—Its Medico-Legal Aspects

(Concluded from page 181)

Reynold Webb Wilcox, M. D.: I have always looked upon life insurance as a betting proposition with the odds in favor of the companies who also hold the bag. When the insurance companies have declined to pay the amount of the policy I have assisted the widows sometimes to the discomfiture of the company. Three old line companies started at that time to get a bill enacted into law releasing the medical profession from professional confidence in cases where the individual was insured. The question regarding professional confidence, whether applied to lawyers, physicians, or priests, is not a law but a rule of evidence. This bill, it is needless to say, never got out of the committee. There has been much said tonight as to the efforts of the old line companies, particularly those specializing in retail life insurance, to promote the health of individuals and communities, but the reason may be this: The span of productive life has become shorter and shorter as years go by. The Health Board statistics would seem to indicate the prolongation of life, but this includes the span of life of children, the unproductive years. Therefore, every effort must be made to conserve the health of individuals during the years in which premiums are paid or the rates must increase. These are based on tables for expectation of life which were assembled in England some sixty years ago.

There is a defect in industrial insurance, known as Workmen's Compensation, which works an injustice to the workman and, as well, to the average physician. The taking care of people injured or sick is in the hands of a commercialized syndicate of physicians. A system of assistance after accident which limits the amount to be paid to the physician to \$1.50, who does the work and must furnish dressings, etc., half of which he must pay to the physician who manages the group treatment of these patients presumably cannot be as efficient as that of the average physician. That is the injustice to the physician.

The injustice to the workman is that he is told that all that is necessary is that he must appear before a referee and state his condition. He is then confronted by the attorney for the insurance carrier. I have been present at such a case and rarely have I encountered such pestiferous specimens as these men. I have been told that the old ambulance chasers are now



FIG. 8.—By rotation inward the complete reduction is effected.

attorneys for the insurance carriers who would seem to be employed to browbeat the workmen who are trying to present just claims, as well as one who is recognized as a medical expert and is endeavoring to present the proper conclusion from the facts.

The conduct of the attorneys whom the insurance companies employ is a disgrace to the legal profession, so far as I can judge from the only instance in which I have had an opportunity to observe the workings of the law.

Dr. L. W. Zwisohn: As our honored guest is a State official I take the opportunity of expressing my disapproving of laws creating bureaus having jurisdiction over bills for medical

service rendered. Since the Workman's Compensation Law went into effect I have had only two cases that came before the commission for adjudication. In both cases I was asked the insulting questions "Were the visits necessary?" My modest bills were cut, not because they were too high but, as the presiding official expressed himself, doctors as a rule are charging too much. No wonder self-respecting physicians, refuse to treat compensation cases.

Hon. Francis R. Stoddard, Jr.: In closing the discussion I must refrain from answering many of the questions asked as they concern the Industrial Commission, which is entirely separate from the State Insurance Department. The Insurance Department has nothing to do with the Industrial Commission. It is not concerned with the hearing of Workmen's Compensation cases. The Insurance Department was founded in 1860 for the purpose of looking after the solvency of the insurance companies, and, later on, the treatment of policyholders. We are obliged to see that the companies obey the law and generally to control the companies in that way, but the administration of the Workmen's Compensation Act was assigned to the Industrial Commission. For some time there has been an effort on the part of the Insurance Department to extend its power of rate supervision to cover the State Insurance Fund, but there is no law yet to that effect.

In regard to State insurance, personally I am against the State in business. A private office can be run with fewer employees and less expense than a State department. But the State should have supervision of insurance.

If there is some cause for complaint that the companies through their attorneys and possibly through appeals prolong the time of payment in Workmen's Compensation cases, the remedy lies in getting after the company, not in creating a State fund. Many of the men advocating a compulsory State fund represent labor unions and I believe they hope eventually, if there is such a fund, that they will have some say in the management. There would also be large opportunities to dissipate the funds and the State would have to make up the deficiency by increased taxation. I don't think we want to add that burden to those we already have.

My thought about negligence cases is that there is too much of the personal element in them. If the injured party has a clever, experienced lawyer, he is more successful in prosecuting his claim. If the jury were required to pass only on the questions of negligence and contributory negligence, the question of the actual damages to be awarded could be worked out as the Industrial Commission works it out; it would be a better procedure than if the amount were left to the jury.

Possibly you do not appreciate the power that is given to the State Insurance Superintendent over the companies. Under Section 63 of the Insurance Law, the Superintendent of Insurance can liquidate a domestic company if it violates the law. Under Section 32, whenever in the judgment of the Superintendent of Insurance, it will best promote the interests of the people of this state, he may revoke the certificate of authority of a foreign company to do business in this State. That is one reason why the companies have great respect for the power of the Insurance Department. That is why I ask you, if these companies do not carry out their contracts, to come to me and I promise you I will get the facts, and the matter will be properly dealt with according to law.

#### "Crow's Feet"

(Concluded from page 186)

tion. Analgesics and antipyretics, affect changes in the vascularity of the nose and their action in these conditions may be thus explained.

A large variety of ocular disturbances due to nasal congestion and obstruction may be associated with the symptoms above described—heterophoria, dacryocystitis, retinal congestion and edema, retinitis and neuritis are among the conditions reported. It is not generally recognized how rapidly changes in the nasal circulation affect the ocular circulation. The writer has lately observed in a number of cases of acute rhinitis, an acute congestion on the vessels of the retina with mild discharges of a transitory nature. The question as to whether these ocular changes are the result of toxic absorption or vascular changes, is answered by the numerous reports in the recent American and French literature of ocular changes, in some cases nerve atrophy, in cases showing no signs of a purulent infection of the nose, clearing up on

the removal of the middle turbinate and uncapping of the ethmoid cells. The etiology of these conditions has been determined to be a hyperplastic ethmoiditis, which though not of a toxic nature, interferes with the vascularity of surrounding parts.

The differentiation of periocular edema due to renal disease and rings about the eyes is comparatively simple. The edematous infiltration of the skin of the nephroses extends well beyond the region of the orbit over the cheeks and temple, and the venous plexus instead of directly underlying the skin as is the case in the rings, is completely hidden by the overlying edematous transudate.

The treatment of these cases must obviously be the relief of nasal obstruction and congestion. Palliative treatment consists of shrinkage of the mucosal vessels by means of epinephrin or adrenaline. Correction of septal deviations, removal of diseased ethmoid cells and hypertrophied middle turbinates, and correction of other obstructions to the local circulation, together with treatment of conditions which indirectly affect nasal vascularity, is usually followed by prompt improvement in cases seen in the early stages. When the periocular puffiness has existed for a long time, flabby pigmented bags of skin form about the eyes. These latter will not be improved in appearance in any manner other than cosmetic surgery.

Smoking is reserved for final consideration because it is the most frequent form of irritant inducing nasal congestion and precipitating the train of symptoms associated with it,—stiffness in the nose, headaches, ready fatigue and periocular puffiness. The onset of these aprosexiac symptoms in smokers so effected, varies in rapidity, depending upon the presence of predisposing factors, such as nasal obstruction, and inflammatory conditions of the nasal mucosa. Inhalation of the smoke and exhalation through the nose is especially deleterious because of the drying and irritating effect of the warm smoke. This effect of smoking is unquestionably more widely met with and of more serious consequence than the more popularly recognized, though of questionable frequency, nicotine or furfural poisoning.

230 East 79th St.

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## The Physician's Library

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**The Operating Room.** By the Staff of St. Mary's Hospital, Rochester, Minn. 165 pages. Philadelphia: W. B. Saunders Company, 1924.

This is intended as a book of instruction for nurses and sisters, laying down particularly the operating room procedure at St. Mary's Hospital, which is one of the integral parts of the Mayo Clinic. The plans of the operating room are given, with equipment; the procedures preliminary to operation are described, and the instructions to the nurse during and after the operation are laid down. The reader is also told how to prepare patients for various types of operations and is given a great deal of other information which should prove quite invaluable to the nurse who anticipates taking up surgical work. Not the least valuable factor in the book are the illustrations, which are profuse in number and enlightening in quality.

**Dislocation and Joint Fractures.** By Frederick J. Cotton, M.D., of Harvard Medical School. Cloth, 745 pages. Philadelphia and London: W. B. Saunders Co., 1924.

The second edition differs from its predecessor in the presentation by the author of many cases which have been shown to him by colleagues. While this eliminates to a certain extent the interesting personal character of the first edition, it gives the readers an opportunity to get a broader viewpoint as a result of work done by a number of men.

The experiences brought out by the war have also added to the wealth of material which has come to the attention of many surgeons and especially to Dr. Cotton. He relates in some detail the types of cases which he found in personal war contact

and as a result of these various factors the second edition is a distinct advance over the first.

One of the most attractive features are the illustrations, of which there are 1,393.

**Intravenous Therapy.** By Walter F. Dutton, M. D., of the Graduate School of Medicine, University of Pennsylvania. Cloth, 542 pages. Philadelphia: F. A. Davis Company, 1924.

A very broad subject on intravenous therapy is fairly well covered in this volume, although certain features are omitted which in the reviewer's opinion might well have been added. The bibliography is particularly scanty. Much of our best literature along certain lines has not been mentioned. This is especially noticeable in the discussion of the intravenous use of arsphenamin, in which, with all the wealth of material on hand, there are only 18 references, many of which are of little value.

Another example is the references to intravenous anesthesia, which are limited to ten. A book of this nature to fill its proper place should devote sufficient space to the entire literature of the subject.

Some of the statements made will not meet the approbation of some practitioners. For example, dermatologists are likely to take exception to this statement: "Treatment of exfoliative dermatitis is difficult." The author does not mention the work of Ravaut of Paris, broadened and made practical by McBride and Dennie of Kansas City, regarding the treatment of dermatitis exfoliativa with sodium thiosulfate, a product which renders treatment a most simple matter. The book, covering as it does a new field, contains many points of real interest and will go far toward enlightening the profession in a most important work. It is easily the best book yet presented on the subject.

**Pathological Technic.** By Fred B. Mallory, M. D., of the Boston City Hospital, and James D. Wright, M. D., of Massachusetts General Hospital. Cloth, 666 pages. Philadelphia and London: W. B. Saunders Co., 1924.

This instructive book has had eight editions since it first appeared in 1897. While this edition is entirely new and the contents have been enlarged and revised, the important factors are the revision by different authors, aside from the editors, of chapters on bacteriology, serum diagnosis, blood, and central nervous system. There are new chapters on examination of spinal fluid and the opening of the skull of the new-born, also by other writers. The book contains the usual additions and deletions and it stands as it has for these many years as one of the best of this type in the literature.

**The Human Testis.** By Max Thorek, M. D., of Chicago. Cloth, 548 pages. Philadelphia: J. B. Lippincott Co., 1924.

At first blush it would seem a bit difficult to fill 548 pages with informative data on the testicle, but the author has done this to the edification of his readers. The outstanding features are the chapters devoted to gland transplantation, including the technic of operation. He has set forth this subject in a most comprehensive manner.

Some of the chapters in the book are devoted to the testicle's anatomy, histology, physiology, pathology, dystrophias, functional variation, neuroses, traumatic injuries, as well as diseases of the scrotum, varicocele and hydrocele. Steinach's vasoligation is very well described. The author devotes a few pages to the male climacteric, emphasizing the fact that some men do suffer from this condition and he suggests a gland transplant as a possible remedy.

The author has produced a book which is certain to prove of interest to a large number of readers.

**Three Problem Children.** Publication No. 2 of the Joint Committee on Methods of Preventing Delinquency. Published by the Committee: 50 East 42nd Street, New York.

This small book discusses in narrative form the cases of three problem children—the causes of their maladjustments and how they were corrected. These narratives show clearly how much can be done by adjusting children to their environments, or possibly better, in some instances, adjusting environments to the children.

In following these cases one readily sees that each one exhibits a special combination of physical, mental and social disabilities and assets, creating in each case his or her own distinct problem. One appreciates, therefore, the necessity for understanding and helping each child as an individual.

After reading these three narratives, it becomes apparent that some of our traditional disciplinary methods may be at fault. It is made clear that wrong behavior on the part of a child may not be due to perversity or sin, but may reflect simply bad handling of his problem by parents or teachers.

We advise all who are interested in children to read the stories of these three. Parents will find a great deal of value to them

between the covers of this book—they may even find the answer to many of their own problems.

**Anatomy of the Nervous System.** By Stephen W. Ranson of Northwestern University. Cloth, 421 pages. Philadelphia and London: W. B. Saunders Co., 1923.

The author has approached his subject from the standpoint of development and function and he presents the nervous system in its relation to the rest of the body. A somewhat dry topic is treated as interestingly as can be done and the work may be regarded as monumental. It affords the student a most complete study of the subject and medical men who have occasion to deal with matters of this nature will find it of very great value.

#### Report on Plumbing

The Department of Commerce report on Recommended Minimum Requirements for Plumbing in Dwellings and Similar Buildings results from a wide-spread feeling that present state and municipal code requirements are in some respects unnecessarily restrictive and that conservation of labor and materials could be effected by scientific investigation of the burdens on such systems, and their performance under conditions of use. It is well known that the codes of different localities vary widely and that practices forbidden in some places are successfully employed elsewhere. The benefits of uniform requirements in permitting simplification of plumbing supplies also are generally recognized.

Secretary Hoover, early in 1921, organized the Division of Building and Housing in the Department of Commerce to serve as a focus and clearing house for information useful to the building industry. It shortly became an important part of the Division's work to gather information on the subject of building and plumbing codes, with a view to more uniform and economical requirements, and a Committee of experienced sanitary engineers and plumbers was called together to consider the drafting of a recommended plumbing code. In order that this Committee might have at hand scientific data on the action of plumbing system, arrangements were made to perform extensive tests with plumbing equipment at the Bureau of Standards in Washington. These experiments continued for over two years under the supervision of the Committee and afforded much valuable data which was analyzed and interpreted by that body in preparing its code of recommended requirements.

The results indicate that present customary assumptions in the design of plumbing are considerably on the side of safety and point the way to substantial economies in future work of this sort. The Committee recommends that 3-inch soil stacks be permitted in systems for dwellings; that the running or house trap now required in many cities be omitted and that a distance of not to exceed 5 feet be permitted between traps and ventilation pipes. As a result of tests with complete household systems it was found possible to eliminate much of the expensive piping now considered necessary. Economies possible through complete adoption of the Committee's recommendations are estimated at from \$50 to \$100 for a 2 story dwelling with the usual number of fixtures, depending on the nature of requirements now obtaining in a given locality.

Consideration was given to the much discussed subject of plumbing code administration. The report states that while the relation of defective plumbing to disease is much less than formerly believed, the subject in all its branches is not yet fully explored, and the possibility of direct access of vermin from the interiors of plumbing systems to those of buildings is sufficiently objectionable to justify public regulation of plumbing work. The Committee recommends a competent official plumbing inspector under jurisdiction of public safety authorities, to examine and approve plans and specifications, test and approve plumbing systems and take such other measures as will make his control of plumbing work effective.

The report contains 260 pages of text and one hundred illustrations, mostly given in connection with the report of experiments at the Bureau of Standards. It may be obtained from the Superintendent of Documents, Washington, D. C., for 35 cents per copy. Remittances should be by currency or money order.

#### The Wassermann Reaction in Diabetes

Rockwood and Sanford report the results of Wassermann tests on 501 patients with diabetes, 201 by the Noguchi and 300 by the Kolmer technic. They conclude that there is only a coincidental relation between syphilis and diabetes in their series. False positives are rare in diabetes and do not exceed in number the proportion that would normally be expected as falsely positive in the types of technic employed by various authors.—(Am. J. Syph., 1923, 7, 679.)